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THE COMING CONGRESS OF TECHNOLOGY

It will mark the 50th Anniversary of the granting of the Charter to the Institute—
Anniversary Smoker and Banquet to be given

The Congress of Technology which will be held at the Institute, Monday and Tuesday, April 10th and 11th, will be the most important event in the history of the Institute since its foundation because it will surely mark the beginning of a new era of prosperity and of achievement. The event will partake of professional, social and public features and the notable papers to be presented will constitute a unique record of the practical achievements of science in modern life. The meetings of the Congress will be open to the public and arrangements are being made to care for the large numbers that will be in attendance from New England as well as from the entire country.

The occasion marks the fiftieth anniversary of the granting of the Institute's charter. During these fifty years, the world has seen the fruition of President Rogers' plans, for the "advancement, development, and practical application of science in connection with arts, agriculture, manufacture and commerce," which the Institute was organized to promote.

The social features of the anniversary

have been delegated to an alumni committee which has arranged for an anniversary smoker in Symphony Hall on April 10th. This will probably be the largest affair of the kind ever held in New England. The Waltham Watch Company Band of thirty pieces will furnish music and specialties of an unusual character will be presented at intervals during the evening. The moving pictures of the Technology Reunion of 1909 will be thrown on the screen and a special committee is at work on lantern slides of amusing episodes during the history of the Institute taken largely from Techniques.

Application for tickets will be made in the usual way on blanks to be sent out within a few days. With the regular ticket application there will be a blank for ladies' tickets to the balcony.

The Association of Class Secretaries is actively engaged in arranging for class suppers of all the classes on Monday, April 10th. Most of the classes will, no doubt, be glad to have their regular meeting at that time. Others who prefer to have a class meeting at a time when the whole evening can be devoted to it, will

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meet informally or arrange to dine in a public dining room of some hotel and go to Symphony Hall later. The hall will be open at 7.30 and the fun will begin about 8. It is expected that 1,000 Tech men will be on the floor.

On Tuesday evening, April 11th, an anniversary subscription banquet will be given at Symphony Hall to which alumni and prominent citizens of New England are invited. The banquet will be arranged on a magnificent scale and will be somewhat similar to the reunion banquet, of 1909. The speakers will be men of national reputation more or less directly connected with the development of industry. Invitations to this banquet will be sent out within a short time with application blanks. It is believed that some very interesting announcements will be made during this banquet.

The first session of the Congress of Technology will be held in Huntington Hall, Monday, April 10th, at two o'clock. President Maclaurin will open the exercises with an address and he will be followed by prominent speakers who have been invited to prepare papers for the Congress. April 11th will be the second day of the Congress and will be continued in Huntington Hall. The papers themselves will mark the advance skirmish line in science and technology and will reflect rather than recount the victory of technical education which was conceived by William B. Rogers.

Half a century ago there were many forces at work to impress on far-seeing men the necessity of radical changes in education in order that the country might profit as it should by the discoveries of science and by the application of its method and spirit to the great practical problems of the day. Following the plan laid down for it the Institute has trained a great number of men who are now in the very front rank of science, men who have extended far the boundaries of knowledge and thereby gained a world-wide fame. In addition to this its former students are to be found in positions of power and responsibility in every state of the Union, engaged in the work of

developing mines, opening up the country by means of railroads, applying scientific methods to the great problems of transportation, power production and distribution, advancing chemical industries, conserving the public health, and contributing in countless other ways to the increase of the nation's wealth.

This practical application of science to the affairs of life will be surveyed and described, as also the conditions and problems of groups of allied industries, in a large number of papers by alumni and members of the faculty of the Institute. The record of the proceedings of the Congress, will furnish an epitome of what has been done by the application of technical science to the world's business.

The papers to be presented at the Congress of Technology are as follows:

Landscape Architecture,—Stephen Child, '88, Landscape Architect and Consulting Engineer, Boston.

Some Phases of Modern Architectural Practice,—Walter H. Kilham, '89, of Kilham & Hopkins, Architects, Boston.

The Engineer and Architect Unite,—Luzerne S. Cowles, '97,—Asst. Designing Engineer, Boston Elevated Railway Co., Boston.

The Improvements in Efficiency of Electric Lighting Properties and What the Public Gains Through These Improvements,—William H. Blood, Jr., '88, Engineer with Stone & Webster, Boston.

Instruction in Finance, Accounting and Business Administration in Schools of Technology,—Harvey S. Chase, '83, of Harvey S. Chase & Company, Certified Public Accountants, Boston.

Commercial Development,—Charles Hayden, '90, of Hayden, Stone & Company, Bankers, Boston.

The New Profession of Economic Engineering,—Roger W. Babson, '98, "Babson's Reports," Wellesley Hills, Mass.

Prevention and Control of Fires Through Scientific Methods,—Edward V. French, '89, Vice-President and Engineer, Arkwright Mutual Fire Insurance Company, Boston.

Reclamation of the Arid West,—Fred-

erick H. Newell, '85, Director of the Reclamation Service, Washington, D. C.

Research as a Financial Asset,—Willis R. Whitney, '90, Director of the Research Laboratory of the General Electric Company, Schenectady, N. Y.

The Spirit of Alchemy in Modern Industry,—Professor William H. Walker, Director of the Research Laboratory of Applied Chemistry, M. I. T.

The Responsibility of Manufacturers for the Training of Skilled Mechanics and Shop-Foremen,—Prof. Arthur L. Williston, '89, Director, Wentworth Institute, Boston.

Training of Industrial Foremen,—Prof. Charles F. Park, '92, Director, Lowell School for Industrial Foremen, M. I. T.

The Technics of Iron and Steel,—Theodore W. Robinson, '84, Vice-President Illinois Steel Co., Chicago, Ill.

The Industrial Need for the Exceptional Man,—Odin B. Roberts, '88, Lawyer, Boston.

Education—Its Function in Training for the Textile Industry,—Charles H. Eames, '97, Director, Lowell Textile School, Lowell, Mass.

Development of Mining Schools,—Prof. Robert H. Richards, '68, in charge of the Department of Mining Engineering, M. I. T.

Technical Education and the Contracting Engineer,—Sumner B. Ely, '92, Vice-President, Chester B. Albree Iron Works Company, Allegheny, Pa.

The Technical School Graduate; His Strength and His Weakness,—Prof. H. P. Talbot, '85, in charge of the Department of Chemistry and Chemical Engineering, M. I. T.

The General Educational Value of the Study of Applied Science,—Alan A. Claflin, '94, President, Avery Chemical Company, Boston.

The Influence of the Institute Upon the Development of Modern Education, James P. Munroe, '82, Executive Director Boston 1915, Boston.

The Elevation of Applied Science to an Equal Rank with the so-called Learned Professions,—Mrs. Ellen H. Richards,

'73, Instructor in Sanitary Chemistry, M. I. T.

Factory Sanitation and Efficiency,—Prof. C.-E. A. Winslow, '98, Associate Professor of Biology of the College of the City of New York, and Curator of Public Health in the American Museum of Natural History, New York City.

The Pollution of Streams by Manufacturing Wastes,—William S. Johnson, '89, Sanitary and Hydraulic Engineer, Boston.

Sewage Disposal with Respect to Offensive Odors,—George W. Fuller, '90, of Hering & Fuller, Hydraulic and Sanitary Engineers, New York City.

Present Status of Water Purification in the United States and the part that the Massachusetts Institute of Technology Has Played,—George C. Whipple, '89, of Hazen & Whipple, Consulting Engineers, New York City.

Profitable and Fruitless Lines of Endeavor in Public Health Work,—Prof. Edwin O. Jordan, '88, Professor of Bacteriology, University of Chicago, Ill.

The Technical School Man in Public Health Work,—Harry W. Clark, '88, Chief Chemist, Massachusetts State Board of Health, Boston.

The Life Saving Corps of the Technical School,—Prof. Severance Burrage, '92, Professor of Sanitary Science, Purdue University, Lafayette, Ind.

Reliability of Materials, Walter C. Fish, '87, Manager General Electric Works, Lynn, Mass.

The Chemist in the Service of the Railroad,—H. E. Smith, '87, Chemist and Engineer of Tests, Lake Shore and Michigan Southern Railway, Collinwood, Ohio.

Scientific Industrial Operation,—Tracy Lyon, '85, Assistant to First Vice-President, Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa.

The Natural Increase in the Ratio of Burden to Labor in Modern Manufacturing Processes,—James B. Stanwood, '75, Engineer and Vice-President, Houston, Stanwood & Gamble Co., Cincinnati, Ohio.

Scientific Management, David Van Alstyne, '86, Vice-President, Allis-Chalmers Company, Milwaukee, Wis.

An Object Lesson in Efficiency,—Wilfred Lewis, '75, President, The Tabor Manufacturing Company, Philadelphia, Pa.

The Scientific Thought as Applied to Railroad Problems,—Benjamin S. Hinckley, '99, Engineer of Tests, N. Y., N. H. & H. R. R., New Haven, Conn.

The Field of Scientific Management in Railroad Work,—Samuel M. Felton, '73, President, Chicago Great Western R. R., Chicago.

The Development of Economical Ore Dressing Systems,—Frank E. Shepard, '87, President, Denver Engineering Works, Denver, Colorado.

Metallography and Its Industrial Importance,—Prof. Albert Sauveur, '89, Professor of Metallurgy and Metallography, Harvard College, Cambridge.

The Conservation of our Metal Resources,—Albert E. Greene, '07, Electro-Metallurgist with the American Electric Smelting and Engineering Company, Chicago, Ill.

An Electric Furnace for Zinc Smelting,—Francis A. J. FitzGerald, '95, Consulting Engineer, Niagara Falls, N. Y.

Some Causes of Failures in Metals,—Prof. Henry Fay, Professor of Chemistry, M. I. T.

Analysis of Some Losses of Efficiency in a Large Producer-Gas Engine Plant, John G. Callan, '96, Engineer with A. D. Little, Inc., Boston.

Coal Combustion Recorders,—Prof. A. H. Gill, '84, Professor of Technical Analysis, M. I. T.

Thirty Years' Work in Boiler Testing,—George H. Barrus, '74, Expert and Engineer, Boston.

Mechanical Handling of Materials,—Richard Devens, '88, Manager, Eastern Office of the Brown Hoisting Machinery Company, New York, N. Y.

The General Solution for Alternating Current Networks,—George A. Campbell, '91, Engineer, American Tel. & Tel. Company, New York City.

Mail Handling Machinery at the Pennsylvania Railroad Terminal and United States Post Office at New York City,—Julian E. Woodwell, '96, of L. B. Marks

& J. E. Woodwell, Consulting Engineers, New York City.

The Development of a System of Underground Pneumatic Tubes for the Transportation of United States Mail,—B. C. Batcheller, '86, Chief Engineer, American Pneumatic Service Company, New York, N. Y.

The Control of Thermal Operations and The Bureau of Standards,—George K. Burgess, '96, Associate Physicist, Bureau of Standards, Washington, D.C.

Improvements in Cotton Bleaching,—Walter S. Williams, '95, Textile Expert, Arthur D. Little, Inc., Boston, Mass.

Power Plant Betterment,—H. H. Hunt, '89, Stone & Webster Management Association, Boston, Mass.

The Debt of the Manufacturer to the Chemist,—Hervey J. Skinner, '99, Vice-President, Arthur D. Little, Inc., Boston, Mass.

The Record of Technology

In an article published in the *Popular Science Monthly* a few years ago, Professor George F. Swain summarized the claims of the Institute to recognition as a leader in the development of technical education as follows:

"It was the first school in the world to institute laboratory instruction in physics and chemistry to students in large classes as a part of the regular course of each candidate for a degree; the first to equip a mining and metallurgical laboratory for the instruction of students by actual treatment of ores in large quantities; the first to establish a laboratory for teaching the nature and uses of steam, and a laboratory for testing the strength of materials of construction in commercial sizes; and the first in America to establish a department of architecture. Later still, it was the first school in America to establish distinct and specialized courses of study in electrical engineering, in sanitary engineering, in chemical engineering and in naval architecture."

WORKING FOR A STATE GRANT

Committee of Education and Senate Ways and Means favorable—Hearing before Joint Committee of Ways and Means

The Institute's bill for \$100,000 a year was passed on favorably by the joint Committee on Education of the Legislature and was given a hearing before the joint Committee on Ways and Means, on February 28. The Senate Committee reported February 29 that the bill ought to pass and it will come up in the Senate for vote probably before the REVIEW is issued. It will then go to the House and be referred to the Ways and Means Committee. After this committee has reported, it will be finally voted on.

The hearing before the joint Ways and Means Committee of the Massachusetts Legislature took place February 28th. Those who appeared for the bill were Edwin S. Webster, '88, of Stone & Webster Corporation; President R. C. Maclaurin; Colonel T. L. Livermore of the Corporation; Francis R. Hart, '88, chairman of the board of directors of the Old Colony Trust Company, and former treasurer of the Institute; Harvey S. Chase, '83, of Harvey S. Chase & Company; B. Preston Clark of the Plymouth Cordage Company; J. Franklin McElwain president of the W. H. McElwain Company; Everett Morss, '85, president of the Simplex Electrical Company, and Edgar N. Wrightington, vice-president of the Consolidated Gas Company. No one appeared in opposition.

James W. Rollins, '78, chairman of the Committee on State Aid, conducted the case for the Institute.

Mr. Webster stated that ever since Stone & Webster started in business twenty years ago, they have been taking a number of graduates from the Institute each year, some years as many as twenty-five or thirty, and in his opinion, this has been one of the greatest sources of strength in the development of the business, not only along scientific lines, but along practical lines as well.

Dr. Maclaurin gave a brief résumé of the arguments made at the hearing before the Committee on Education and in response to questions from the committee made a statement in regard to the financial condition of the Institute and outlined the plans for future development. He pointed out that the great industrial advance in Germany during the last twenty-five years from a poor country to a rich one has been accomplished largely through technical research and showed that there was no reason why this community should not attack the business problem just the same as Germany has. He spoke especially of the laboratory of applied chemistry and the practical work it is accomplishing for the community as well as for the country at large. In one case a concern was throwing away a by-product which through the advice of the laboratory was utilized and a saving of \$80,000 a year was made.

In regard to a query about the McKay will, Dr. Maclaurin made the following statement: It is not uncommonly supposed that the plan which was suggested some years ago by the terms of which the Institute was expected to derive some benefit from the McKay will was rejected by the Institute of Technology, and its trustees are blamed in certain quarters for having turned down what some people consider a good proposition.

Now, as a matter of fact, the Institute of Technology did not reject the plan at all. The only body that had any power to enter into such an agreement was the Corporation of the Institute, and on the only occasion when it expressed any opinion on this plan it approved it. In spite of this the plan fell through, because a judgment of the Supreme Court made it impracticable for the Institute to fulfill the conditions of the agreement. The case that the court decided (*Wilson*

v. *Massachusetts Institute of Technology*, 188 Mass., page 565) had reference to the restrictions on our Boylston Street property and the decision made it impossible to carry through the plan of coöperation with Harvard that would otherwise have been possible. I may add that even if the scheme had not miscarried, the Institute would not have been free from financial difficulties today. The benefit to be derived was mainly prospective, and the Institute's share of the present income from the McKay bequest would have been small. That is a matter that has been greatly misrepresented in current discussion of this question."

The President was followed by Colonel Livermore who made a condensed statement of the Institute's case as follows: At the present time the Institute has to depend largely for making up the deficit incurred in its current expenses on contributions from the community, from alumni and others. It has become apparent that the Institute in order to provide for the increasing number of students that are pressing upon it, and to provide enlarged and adequate facilities, must move to a new site. It is going to take all of its resources, and all that it can get contributed by its friends, to pay the expenses of moving and establishing a new plant.

It is hopeless to expect that the community during the ten years in which this new establishment is being built will contribute both the deficiency in current expense and the amount which must be raised to build the new plant. For that reason the Institute now asks the State for this contribution of a hundred thousand dollars a year for its current expenses, and for that reason only, so that its requests to its friends and the community and the alumni shall be addressed entirely to its wants for establishing the new plant.

If the bill does not explicitly confine the expenditure of this \$100,000 a year to current expenses there is not the slightest objection to having any phraseology incorporated within the bill which will make it clear.

Now, the property of the Institute

may be divided largely into two lots. There is the Boylston Street property on which it has two buildings opposite the Brunswick Hotel, and there is the property on Clarendon Street where its group of engineering buildings is situated; and outside of that it has some property on Garrison Street, and some exercising grounds in Brookline.

The Legislature has released to the Institute of Technology all its right in the land on Boylston Street, but the court has intervened and says that the abutters have rights which must be respected, and as long as they insist upon those rights it is impossible to sell the Boylston Street property for its value, or anywhere near its value. This, I understand, cannot be remedied by an act of the Legislature; the Legislature has given all it has a right to give in the most liberal manner; but the court says the abutters have rights which the Legislature cannot take away.

THE CHAIRMAN.—Do I understand you to say that by a further act of the Legislature that situation could not be remedied?

COLONEL LIVERMORE.—I understand it cannot be; I understand the effect of the decision of the court is that the Legislature cannot take away the rights of the abutters.

THE CHAIRMAN.—That is, under the police power of the Legislature am I to understand that the Legislature could not take away those privileges from the abutters—if it was for the best interest of the state?

COLONEL LIVERMORE.—I should be very reluctant to oppose my judgment to that of the chairman of the committee, or the committee on that point, but I understand that the Supreme Court has intimated that that is its opinion.

THE CHAIRMAN.—That is their opinion of the present act; do you understand the Supreme Court to make a forecast of the future?

COLONEL LIVERMORE.—I understand that is a correct inference from what they have decided, but I may be wrong. I wish to say further, that we should be

extremely glad to entertain the view which the chairman intimates may be the correct one, that the Legislature could enable us to sell that land regardless of the abutters, but our counsel whom we have employed in the matter, and who are learned in the law, have not been able to come to that conclusion. And as for myself, with a certain reminiscence of legal learning which I once had, I have not been able to come to that conclusion.

THE CHAIRMAN.—The Legislature does some very queer things.

COLONEL LIVERMORE.—It does.

THE CHAIRMAN.—And if some of our laws are not better obeyed than others I know of, I don't think it makes so much difference what the State thinks about it.

COLONEL LIVERMORE.—I sympathize with you; but for the moment assuming that what I suppose to be the legal situation is the true situation, this is the fact—that the Institute of Technology cannot now sell the Boylston Street property for its adequate value and devote the proceeds to the new site. At any rate, the Executive Committee of the Institute, of which I am a member, has acted upon that hypothesis and has assumed that the property cannot be sold for an adequate value and that until the abutters themselves release that right, the Institute must make whatever use they can make of the Boylston Street property.

We are not without hopes that in the course of time, as business advances to the westward, and invades Newbury Street, that it will become apparent to the abutters that it is for their pecuniary interests to have those restrictions released, but at what time that will happen no one can predict.

THE CHAIRMAN.—If those restrictions were not there what do you believe that property would be worth?

COLONEL LIVERMORE.—Well, I have not made any estimate, but I assume that what Dr. Maclaurin said may be relied upon as the probable value,—\$2,000,000. But assuming that we cannot sell that land today for its true value, the plans of the committee have been to continue

to occupy the buildings on Boylston Street for one department of the Institute while moving other departments to the new site, and probably continue to occupy those buildings on Boylston Street until the legal situation shall be changed. The other land on Clarendon Street, and the buildings, I have reason to believe can be sold for three-quarters of a million dollars, and it results that to move to the new site the Institute must raise from its friends a million dollars or a million and a half in addition to what has already been offered for the site.

Now, it is because we must raise that sum to move that we cannot hope to get the additional sum from our friends to make up the deficit, that we are asking the Legislature that the State may contribute a hundred thousand dollars a year during ten years. I want to add one word as to my views upon the policy which should govern the State in matters like this. I should not wish to subscribe to the view that the State ought to embark on a policy of giving aid to all institutions of higher learning in the state; I don't think it would be a good fiscal policy, and do not think it would be wholesome, and I do not think it would be for the benefit of the institutions themselves. I think that the so-called institutions of liberal learning can, in the future as they have in the past, depend upon private contributions. Their education is more in the nature of a luxury than is technical education that is offered at the Institute of Technology, and some other institutions in the state, and people are ready to contribute for their luxuries and are not ready to contribute for the economical welfare of the State; and it seems to me if I were upon this committee, with my present lights, I should wish to consider whether this subsidy was one which contributed to the economic benefit of the State. And because to my mind it is most essential for the economic welfare of the State to support the Institute of Technology, I am willing to appear here and advocate as a citizen the grant of this \$100,000 a year.

This State has very little out of which to make money; its agricultural products

are one fifteenth of the value of the manufactured products. It has ice, it has granite, and I don't know of anything else that it produces except men, and the best crop it can cultivate for its future is men—men to bring a revenue to the Commonwealth.

Mr. Hart, who followed Colonel Livermore, said that he thought it would be a surprise to the community in general if they could know the sacrifices made by Massachusetts boys who go to the Institute for an education and the enormous advantages which they derive from their training there. He thought that there were more Massachusetts boys who were obliged to make sacrifices than those from other states for the reason that their parents lived in the vicinity giving them an opportunity which those farther away do not have. He spoke of the prospects of the Institute for securing aid from alumni and the community in general and indicated that the people would be largely influenced by the action of the Legislature upon this matter. If the question of running expenses could be taken care of, donors would be encouraged to give for the construction of buildings and for equipment.

Mr. Chase presented financial statistics of the Institute in tabular form to the members of the committee and made a statement in regard to the deficits during recent years.

Mr. Clark spoke as follows: "Colonel Livermore has said that which I wished to say, so much better than I could have said it, that I need only say amen to what he has said with regard to the economic value of the Institute to the State. My interest in this matter is not simply in the men who graduate from the Institute; I wasn't fortunate enough to be a graduate myself, but my interest in it lies in the effect on the working people of Massachusetts, and it is my belief that the effect of the kind of men that the Institute sends today into our manufacturing industries, is very great, and the good effect of one such a man in a concern cannot easily be over-estimated.

"Our working people like to work with men of that character,—men of trained

minds, men with the new methods who are able to supplement by their technical knowledge the practical knowledge which our working people have."

A MEMBER.—I would like to ask if you have graduates of Tech working in the Plymouth Cordage Works?

MR. CLARK.—Our present treasurer and general manager was a graduate of the Institute, Mr. Frank Holmes.

THE CHAIRMAN.—How many others have you?

MR. CLARK.—I could not state that; Mr. Holmes is the most prominent one. I am not appearing in an official capacity, but as a private citizen who has been manufacturing thirty years in the Commonwealth and I can think of many graduates of the Institute whose work I have followed.

THE CHAIRMAN.—You appear as a private citizen, and you do not think this request is excessive.

MR. CLARK.—It is a very large amount of money, but on the other hand isn't it true that the saving in any industry by men of bright minds very often runs in excess of this in a single industry? I believe that is the case in very many. There is the industry I am connected with; I can recall three instances where savings of many thousands of dollars have been made annually by men with technical training.

Mr. Clark was followed by Mr. McElwain who said: "The value to New England of an institution that can turn out men qualified to cope with and absolutely solve the problems of the elimination of waste in time and material is of inestimable value. Such is my opinion of the Institute of Technology, and I believe that any sum of money that may be appropriated will be returned to the community by seeing its industries thrive and prosper because of their efficiency, notwithstanding the barriers as far as freight rates and competition with the West are concerned.

"You might ask why we, as shoe manufacturers, should have in our employ twenty Institute men, and I will tell you the reason. It is because we have absolutely got to have men who have

keen, analytical minds, and who are truthful observers,—people who do things, and not people who talk. Now, that is what we really get out of the Institute men.

“I should like to see the money appropriated because I believe that future generations of New England will bless you, because the industries of New England or the future success of New England depends largely on its handling successfully the large plants that are located in this section; and those plants, in order to be run successfully, must be handled by men imbued with the scientific spirit. I believe that the Institute of Technology can develop men who can operate these plants successfully for the future, and I believe it is up to the manufacturer to take these men and develop them into positions of responsibility. The age of rule-of-thumb is gone and science must have its day even more in the future—particularly with the shoe industry.”

THE CHAIRMAN.—What is the specific employment of those twenty men; what do they do?

MR. McELWAIN.—I think there is creeping into business today more than ever what is termed today “scientific management.” Now, scientific management means largely planning out the work beforehand in a very definite form, and that requires a very analytical mind, and a mind which can grasp details. Now, these men that we employ are largely engaged in what you might call efficiency work and in planning work. We have two types of mind in our business,—one is this scientific man who is planning, who is economizing, who is figuring where we can save money in handling help and material; and the other type of man who is more generally executive.

Mr. Morss made a brief statement in regard to the assistance the alumni had given to the Institute as follows: “There have been two main efforts on the part of the alumni as a body for securing money for the Institute. First, there was a subscription started to provide a building as a memorial to President Walker, this being in the form of a sub-

scription payable annually for five years, and the amount raised for that was approximately \$100,000; raised, I will say, in small subscriptions, for if I remember the largest wasn't over a thousand dollars. And about 1905, a subscription was raised to help pay the running expenses of the Institute; that taking the form of a subscription as before, annually for five years. The result of that subscription has been that beginning with 1906 there has been paid into the treasury of the Institute for the expense account \$206,000 during the five years, and in approximately a steady amount each year. Now, the result of those two subscriptions is that the men have paid, as they say, last year's coal bill for five years. It is rather hard to get men to pay last year's coal bill; they would rather pay something else.

“Instead of asking that, we wish them to help furnish money to put the buildings on the new site which we expect to have very shortly, and there is absolutely no doubt in my mind that they will give double for a new building as compared with what they would give for coal bills.”

Mr. Wrightington who was the last speaker spoke in high terms of work done by Technology men and stated that the prosperity of the Consolidated Gas Company was very dependent on technically trained men as were other large institutions of the community. He said the State had a distinct duty to perform in granting the assistance which the Institute of Technology needs.

The Alumni Association Needs Your Support

Any former student of the Institute making application for associate membership to the secretary of the Alumni Association, and passed upon favorably by the Executive Committee, can become an associate member on the payment of the regular dues of \$2.00 per year, which includes subscription to the nine issues of TECHNOLOGY REVIEW.



Things are Moving Faster at Tech

Tech Club of Washington

The Washington Society of the Institute of Technology has issued a directory showing that there are 159 members of the society in Washington proper and 99 members in the vicinity, or a total of 258 members. The first part of the directory contains a historical sketch which shows that the society was founded in 1899 with a membership of twenty men. The society took a leading part in the founding of the University Club in Washington and when the new clubhouse was built, the first smoker was held by Technology alumni.

that an anonymous donor has just given this laboratory \$6,000 for carrying on its work which, with previous gifts from the same friend, makes a total of \$50,000 up to date.

New Automobile Delivery Truck

The Institute has just purchased a new automobile delivery truck for general expressing and "pick-up" work about the city. The Bursar found that by investing in a truck, a considerable amount now paid to local expressmen could be saved. The truck is in charge of the chief engineer's department.

Addition to Sanitary Research Staff

Simeon C. Keith, Jr., '93, chemist and industrial biologist, has been appointed assistant professor of bacteriology at the Institute on the staff of the sanitary research laboratory. It is also announced

Death of Frank S. Farrell

Frank S. Farrell, '05, died at his home in Stoughton, February 25th. Mr. Farrell was an expert sugar chemist and was employed by the Emerson Research Laboratory at the time of his death.

DISCUSSING ASSOCIATE MEMBERSHIP

Council Recommends Changes in Constitution of Alumni Association giving Associates all privileges of regular Members

The meeting of the Alumni Council at the University Club, February 24th, was of unusual interest. It was called to discuss the question of abolishing associate membership in the Alumni Association, and allowing non-graduates elected to membership the same privileges as graduates. This matter has been the subject of more or less discussion during the last few years, and it seemed appropriate to bring it up at this time because of the recommendation by a special committee of the Association that the graduates of the School of Mechanic Arts be eligible for election to associate membership. The report of Charles F. Park, '92, chairman of this committee, is of much interest, and will be found on another page of the REVIEW.

To make this possible the sections of the Constitution to be changed as proposed are as follows:

ARTICLE II.

SECTION 1. The Association shall consist of regular and honorary members.

SECT. 2. The regular membership shall consist of all persons who have received a degree from the Institute, and of such other persons as may be duly elected by the Executive Committee, who have been connected with the Institute as students in any class already graduated, or the former School of Mechanic Arts.

SECT. 3. Any present or former member of the Corporation or of the Faculty of the Institute may be elected an honorary member by the Executive Committee of this Association.

SECT. 4. Honorary members shall be entitled to all privileges of regular members, except that of holding the elective offices in this Association specified in Article III, Sections, 1, 4 and 5.

Messrs. A. F. Bemis, '93, H. W. Tyler, '84, R. H. Richards, '68, Everett Morss, '85, and E. G. Thomas, '87, spoke in favor of the change. The tenor of their remarks being that the chief object of the Association is to "further the well-being of the Institute by fostering the interest of its members in the school and

in each other," and that the effectiveness of the Association would be largely increased by this change.

Dr. F. H. Williams, '74, was opposed to admitting graduates of the School of Mechanic Arts, stating that this would tend to lower the standard of the Alumni Association.

The discussion that followed showed former students of the School of Mechanic Arts would be desirable members and would undoubtedly be of much assistance in advancing the interests of the Association and the Institute. The list comprises some men of national reputation. Mr. Bemis raised the point that nothing the Association could do would change the standard of the Institute, and that already associate members of the Association had every privilege of regular members except that of holding certain elective offices. He also showed that former students of the School of Industrial Science who attended but one year and took courses similar to those given in the School of Mechanic Arts are eligible as associate members of the Association. Professor Richards spoke of having met in his travels a number of men who studied at the School of Mechanic Arts and who have become prominent in their professions. The original proposition included only the graduates of the School of Mechanic Arts, but after discussion, and in view of the fact that the number eligible was small, it was voted to frame the Constitution so that all members of the school are eligible. This was passed, one voice dissenting.

It was voted to submit a change in Section 2 of Article V, as follows:

The Executive Committee shall look after the general interests of the Association, shall have power to fill all vacancies arising among officers or committees elected by the Association, shall have full charge of balloting, shall pass upon all applications for membership in the Association.

Since the meeting of the Council, two of its members who were not present at the meeting and who are opposed to making associate members, regular members of the Alumni Association, have requested that this whole matter be reconsidered. In accordance with this request, Dr. Noyes, president of the association has called a meeting for March 21st.

If the Council does not change its decision, ballots will be sent out to the members of the Association to decide whether or not the constitution shall be changed as suggested. If the change is carried, the Executive Committee will elect all present associate members to full membership in the Association. Graduates will, by virtue of their degree, become members on their graduation; non-members applying for membership will be passed on by the Executive Committee, and if elected, will become full members.

I. W. Litchfield, '85, editor of THE TECHNOLOGY REVIEW, asked for a change in the by-laws in accordance with a recent ruling of the postmaster-general which makes it necessary to separate the subscription to that magazine from the dues of the Association. The Alumni Council has power to make the change in the by-laws after notice has been published for one month in THE TECHNOLOGY REVIEW. The proposed changes are as follows:

ARTICLE VI

SECTION 1. The annual dues for all except honorary members shall be one dollar and with subscription to THE TECHNOLOGY REVIEW, two dollars.

ARTICLE VII

SECTION 1. THE TECHNOLOGY REVIEW shall be the official organ of this Association and its editorial management and publication shall be vested in the Council.

SECT. 2. Members not in arrears shall be entitled to receive all publications of the Association except THE TECHNOLOGY REVIEW to which they may subscribe at the rate of one dollar per year.

Leonard Metcalf, '92, reported progress for the committee in charge of providing a camp for the Summer School of Civil Engineering.

J. W. Rollins, '78, chairman of the

Alumni Committee on State Aid, made a report of the work of that committee.

At the request of President Maclaurin, Dr. Noyes appointed a committee to provide entertainment for the alumni attending the Congress of Technology on Monday, April 10th, as follows: George B. Glidden, '93, chairman; F. H. Fay, '93, C. C. Peirce, '86, H. W. Gardner, '94, and I. W. Litchfield, '85.

Dr. Maclaurin, who was present, outlined the plans for the Congress of Technology and also spoke in favor of the change in the constitution abolishing associate membership, believing that this would be of advantage to the Institute.

It was voted to recommend the following change in the constitution to be voted on by the Association:

ARTICLE VI

SECT. 2. A payment of an amount equal to twenty-five times the annual dues plus the subscription to THE TECHNOLOGY REVIEW shall exempt a member from further payment of dues and further payment of subscription to THE TECHNOLOGY REVIEW.

There were about thirty-five members of the Council present.

New Jersey Recruits Tech Men

George T. Palmer, '09, research assistant in the sanitary research laboratory and sewage experiment station at the Institute, has accepted a position as sanitary inspector for the New Jersey State Board of Health. He is a graduate of the University of Rochester, and is the seventh Tech man enlisted with this State Board of Health.

April Number of the Review

The April number of the Review will be a magazine number uniform with the quarterly formerly published. It is now hoped that this can be issued about the first of April. It will contain the latest news relative to the Congress of Technology.

AN INTERESTING REPORT

Status of Students of School of Mechanic Arts with reference to admission to Alumni Association

For a number of years the question of admitting the students of the School of Mechanic Arts to membership in the Alumni Association has been agitated. During the last year, C. F. Park, '92, and F. W. Hobbs, '89, were made a committee to investigate this matter fully and make a final report. The report is an interesting one and we publish it herewith:

The School of Mechanic Arts was established by the Institute in 1876 and discontinued in 1888. During that period a considerable number of students attended the school, but only about fifty of them were graduated. At that time the school was one of two schools of the Institute of Technology, the other school being the School of Industrial Science,—the only one now existing, and generally known as the Institute. The Institute was also conducting free courses for the trustee of the Lowell Institute, but these courses were not a part of the Institute of Technology.

The first announcement of the school in the Institute Catalogue (1876) read as follows:

"A series of shops having been provided for teaching the students in the department of Mechanical Engineering, the use of tools in wood and iron work by the class system, a two years' course in Practical Mechanism has also been established for those who wish to become master mechanics rather than engineers, and especially for the large class of pupils to whom such a systematic training will prove a valuable foundation for further engineering or other scientific study.

"It affords, also, a good English as well as a good disciplinary education, in preparation for any department of life.

"Tuition \$125 a year." The tuition was afterwards raised to \$150 a year.

In the following year (1877) the name of the school was changed to the School of Mechanic Arts, and the catalogue statement read as follows:

"A School of Mechanic Arts, in which special prominence is given to manual instruction, has been established for those who wish to enter upon industrial pursuits, rather than to become scientific engineers. This school is designed to afford . . . students . . . an opportunity to continue the elementary scientific and literary studies, together with mechanical and free hand drawing, while receiving theoretical and practical instruction in the use of typical hand and machine tools for working iron and wood. The full course includes two years of theoretical and practical studies combined, and students, who successfully complete it, will receive a certificate. Applicants must be at least fifteen years of age, and must pass a satisfactory examination in: Arithmetic, including the Metric System, Geography, Spelling, Punctuation, English Composition, and American History. The beginning and ending of the school year and the days of examinations are the same as in the School of Industrial Science."

"The two years' course included—Shop Instruction, Algebra, Plane and Solid Geometry, Elementary Physics, English Composition, Mechanical and Freehand Drawing, and French,—twenty-eight hours a week of exercise.

"Another change in the catalogue statement of the school was made in 1883. The statement for that year reads:

"For the benefit of those who are unable, for want of time or means, to go through one of the regular courses of the School of Industrial Science, and yet desire a good preparation for industrial pursuits, a subordinate School of Me-

chanic Arts has been established by the Corporation of the Institute."

The catalogue for the years 1876-1883 gave the names of the students in this school, and it included their number in the summary of the number of students at the Institute. It also included, from 1878-1883, the names of the instructors of the school in the same list with the instructing staff of the School of Industrial Science. The names of the graduates were also printed in the Program of Graduation Exercises of the regular Institute classes.

1. It appears that the School of Mechanic Arts was a part of the Institute of Technology; and, in accordance with the constitution of the Association, the committee believes that the graduates of this school are *legally* "regular members" of the Association, the same as all graduates of the Institute.

2. Morally, or in the spirit under which the constitution was drafted, the committee believes that these men would *not* be included as regular members, the name "Institute" being intended for the School of Industrial Science.

"ARTICLE II

"SECT. 2. All graduates of the Institute shall be regular members."

3. The committee believes that these men would be desirable "associate members."

4. The committee believes that to exclude legally these graduates of this school as regular members requires a change in the constitution regarding regular members. The committee believes also that to include them legally as associate members would require a change in the constitution regarding associate members.

5. The committee believes that to make change in the constitution regarding association members would involve inconsistencies unfair to many men.

The committee therefore recommends that Section 2 of Article II of the constitution be changed to the following:

"SECT. 2. 'All persons holding a degree of the Institute shall be regular members.'"

That graduates of the School of Mechanic Arts be received as associate members the same as other persons who have taken special or partial courses at the Institute, and

That other men who have been connected with the School of Mechanic Arts as students be *not* received as associate members.

Historical Photographs Wanted

The committee on lantern slides and moving pictures for the Technology Anniversary smoker in Symphony Hall on Monday evening, April 10, will be glad to receive any old photographs, sketches, or other material which can be worked up into a lantern slide and which will be of general interest to the Tech men present. Anything of a historical or humorous nature will be very acceptable and assurance is given that anything lent will be carefully guarded and returned without injury. Address Prof. Charles E. Locke, Chairman, Massachusetts Institute of Technology, Boston, Mass.

Standardizing Health Reports

Selskar M. Gunn, '04, former health officer of Orange, N. J., who came to the Institute this year to be research assistant in sanitation, has assembled reports of about one hundred small cities for comparison and standardization. In his experience at Orange he was impressed with the lack of uniformity in the various reports, and has been led to undertake this important work.

Where the Whalers Spin Yarns

The New Bedford alumni are all said to be web-footed and they are homesick when away from the breakers' roar. Here is our invitation to the last meeting:

A meeting of the Technology Club will be held on board the steamer, *Gay Head*, at the foot of William Street on the night of Thursday, March 9, at 8 o'clock.

There will be something to eat and something to drink and a speaker.

Be a good old salt and come along.

LOWELL SCHOOL FOR INDUSTRIAL FOREMEN

An Institution that is filling a unique place in industrial education—Institute
Professors on Faculty

The March magazine number of the *Outlook* contains an article on the foundation of the Lowell Institute by John Lowell, Jr., a merchant prince of Boston, who died in 1836. John Amory Lowell, cousin of the founder and grandfather of President Lowell of Harvard was the first trustee. The first lectures were given in 1840 in the Odeon, formerly the Federal Street Theater and afterward in Marlboro Chapel on Washington Street. Since 1879 these lectures have been given in Huntington Hall, at the Institute and some of the most brilliant thinkers of the 19th and 20th centuries have addressed these audiences. The particular portion of the article of special interest to alumni concerned in industrial education relates to the Lowell Institute Evening School for Industrial Foremen provided by this fund.

The admirable purpose underlying the School for Industrial Foremen may best be explained, says the *Outlook*, by quoting a statement made by its director, Prof. Charles F. Park, of the Massachusetts Institute of Technology. "For more than a quarter of century," he pointed out, "Lowell free courses for advanced students had been given by the professors of the Institute of Technology. These courses had done no small amount of good; but, with the increased educational facilities of all kinds in Boston, they seemed to be less necessary than they were formerly. They had, moreover, covered many subjects without much relation to one another, and at the present day we are learning the great advantage of systematic study."

"On the other hand, among the different classes in our community, there appeared to be one which had hardly received the attention it deserved. We have heard a great deal of late years of captains of industry, but the efficiency

of the industrial art depends in a very large measure, and probably to a constantly increasing extent, upon the capacity of its non-commissioned officers—in other words, upon the foremen and superintendents. These men receive the same education today as the ordinary mechanic, and it was thought that it would



Prof. C. F. Park, '92, Director of the School

be a great benefit to the community at large if they could have some instruction in the principles of applied science, so that they might understand more thoroughly the work they were superintending, and be ready to apply improvements.

"It was felt, also, that a better educated class of foremen would be a benefit to the community socially, as an intermediary class between the employer or engineer, on the one hand, and the workmen on the other. To attempt to

train young men separately for the position of foremen would have been, under the existing organization of labor, an impossibility. The foremen must continue, for the present at least, to be promoted from among the workmen. In giving them such an education as is desired, therefore, it was necessary to take men who were already working at their trade; and hence instruction could be given only in the evening."

Opened in the fall of 1903, the school has been increasingly successful, and many of its graduates, thanks to the training received, have won promotion in the machine shops and other industrial plants where they are employed. Two courses, one mechanical and the other electrical, are offered, each extending over two years, and each demanding hard work of its students. Not all of the latter are foremen in the strict sense of the word, but they are young mechanics and electricians earnestly desirous of 'getting on in the world' and making themselves more useful members of society. Only a small proportion of those who apply are admitted to the courses, for the demand is so great that the resources of the Institute of Technology, in whose buildings the instruction is given, would be unduly taxed if a severe entrance examination did not keep down the evening school membership. The average class enters about one hundred and twenty-five, which represents perhaps a fifth of those taking the preliminary examination. The faculty consists of essentially the same men doing the same kind of work during the day in the regular Tech courses, and instruction is by means of lectures, recitations, drawing-room practice, laboratory work, and home work. Certificates are granted to all passing another stiff examination at the end of the second year. No charge whatever is made for tuition.

Mechanical Engineering Research

One of the research problems that is being studied at the present time is an experiment on the 250-foot chimney

of the Edison Electric Company's power house. One result of this investigation has been to show that the increased height of a chimney beyond a certain point does not affect the amount of draft.

Another student is conducting exhaustive tests on the problem of cooling water from condensers. The roof of the engineering laboratory has been made into a reservoir and various devices have been tested. Spraying nozzles thus far have been found to be the best.

Stated Luncheons

BOSTON: The Classes from '01 to '10 meet at the American House Rathskeller, Hanover Street, Fridays, 12.30 to 1.30 p. m.

CHICAGO: Northwestern Association of M. I. T., at Vogelsang's Restaurant, 178 Madison Street, Thursdays, at 12.30 p. m.

PROVIDENCE: Technology Club of Rhode Island, at Brucker's Hotel, Thursdays, at 1 p. m.

ST. LOUIS: Technology Club of St. Louis, at the St. Louis Lunch Room, 4th and Locust Streets, Fridays, at 1 p. m.

WASHINGTON: Washington Society of the M. I. T., at Wallis' Cafe, 617 Twelfth Street, Wednesdays, 12 to 1 p. m.

Class of '96 to Celebrate

The class of '96 is making plans to celebrate its 15th anniversary next June. At a recent meeting of the class it was voted to rendezvous at Dr. Schubmehl's camp at Little Squam Lake and start a new set of traditions at this hospitable haven. Five years ago the class of '96 celebrated its tenth anniversary in camp at Ipswich, Mass.

Annual Meeting of Rhode Island Club

The Technology Club of Rhode Island will hold its annual meeting on Saturday, evening, March 25th. The weekly luncheons are well attended and Tech men who happen to be in Providence on Thursdays, often drop in at Brucker's Hotel.

CONGRESS OF TECHNOLOGY

Marking the 50th Anniversary of the Granting of the Charter to the
Massachusetts Institute of Technology

PROGRAM

MONDAY, APRIL 10:

- 2.30 Address by the President of the Institute and opening session of the Congress in Huntington Hall. Open to the public.
- 6.00 Most of the graduate classes will dine together.
- 8.00 Anniversary smoker at Symphony Hall. The Waltham Watch Company Band of thirty pieces will be in attendance. A number of new and special entertainment features will be introduced, and refreshments will be served. Accommodations for 1100 on the floor. Tickets, \$1 each; balcony seats for ladies, 50 cents each. Five dollars (\$5) entitles former students and undergraduate seniors to tickets for smoker and banquet.

TUESDAY, APRIL 11:

- 11.00 to 1.00 and 2.30 to 4.30.
Sessions of the Congress in the Institute buildings. Open to the public.
- 7.00 sharp.
Subscription banquet in Symphony Hall, to be addressed by a notable group of successful pioneers of industry. Arrangements of an unusual character are being made for this banquet. Covers will be laid for a thousand guests. Subscription ticket, \$5; ladies' tickets, for the balcony, 50 cents each.

Applications must reach Mr. Walter Humphreys, Massachusetts Institute of Technology, Boston, by April 8th. Tickets will be mailed unless otherwise ordered.

An information bureau will be maintained in Rogers Building, 491 Boylston Street.

Merrimack Valley Club

The tenth annual meeting of the club was held at the Yorick Club, Lowell, on Wednesday evening, February 15, 1911. There were thirty-one members present.

Previous to the dinner officers were elected for the coming year as follows:

President Edward B. Carney, '93, Lowell; vice-president, Ivar L. Sjöström, '88, Lawrence; secretary, John A. Collins, Jr., '97, 67 Thorndyke Street, Lawrence; treasurer, William O. Hildreth, '87, Lowell; member of executive committee, Edmund T. Simpson, '90, Lowell; representative to Alumni Council, Charles H. Eames, '97, Lowell.

Resolutions were adopted on the death of two members, William K. Fairbanks, '97, of Lowell, and Linwood O. Towne, '78, of Haverhill.

After the dinner, President George A. Nelson, who presided, introduced John C. Chase, '74, of Derry, N. H., representative to the Alumni Council, who gave a condensed report of the work of that body. The secretary gave a short history of the growth of the club as outlined by the records of the meetings, calling particular attention to the fact that the society was seventh in date of organization of a total of thirty clubs, being preceded only by several of the larger bodies such as those of Washington, New York, Chicago, etc.

The guest of the evening was Henry A. Morss, '93, vice-president of the Simplex Electrical Company, Boston, and one of the alumni representatives on the Corporation. He is also a prominent member of the committee which is promoting the interests of the bill now before the Legislature, asking for an annual grant of \$100,000 for ten years. Mr. Morss detailed the progress of the bill up to date, spoke of the support and approval it was receiving from all sides, and again emphasized by a presentation of statistics the absolute necessity of favorable action in the general court. He exhibited photographs of drawings for the proposed new buildings, and said that on April 10, at the fiftieth anniversary

of the founding of Technology, an announcement of the proposed new site would be made and the place visited. His remarks were most entertaining, and as he closed he was given much applause and a rousing Tech cheer. R. A. Hale, '77, for Lawrence, and president-elect E. B. Carney, '93, for Lowell, reported progress in interviewing members of the Legislature and acquainting them with the particular needs of the Institute.

During the evening Edgar H. Barker, '96, assisted by G. H. Perkins, '99 entertained the members with Technology and other songs.

The meeting was one of the most successful ever held by the club.

Those present were H. A. Morss, '93, Carney, '93, Nelson, '77, Hale, '77, Chase, '74, Hildreth, '85, Ashton, '95, Kimball, '86, Faulkner, '76, Alden, '77, Foster, '03, Stevens, '10, Gilbert, '95, Reed, '09, Perkins, '99, Barker, '96, Eames, '97, Hammond, '97, Keables, '09, Bramhall, '10, Bowen, '07, Poore, '09, Bowers, '09, Davis, '06, Stephens, Simpson, '90, Lambert, '98, Stickney, '75, Eastman, '88, Hildreth, '87, Collins, '97.

Death of William K. Fairbanks

William K. Fairbanks, '98, died suddenly after an operation, January 29th. Mr. Fairbanks was born October 5, 1875, and after leaving the Institute, entered the employ of the Bigelow Carpet Company, Lowell, Mass., and at the time of his death was agent for this company. He leaves a widow and three sons. Mr. Fairbanks resided at Lowell, Mass.

New Officers in Buffalo

At the annual meeting of the Technology Club of Buffalo, February 24, the following officers were elected: W. H. Watkins, '95, president; Richard F. Morgan, '96, secretary; W. L. Spaulding, '05, treasurer. The executive committee will consist of H. A. Boyd, '79, and E. F. Vogel, '00.

New York Club Elects Officers

At the annual meeting of the Technology Club of New York, held at the club house, 17 Gramercy Park, February 4th, the following were elected to serve on the Board of Governors: G. W. Kittredge, '77, Ira Abbott, '81, F. C. Schmitz, '95, D. W. Edgerly, '98, and R. H. Howes, '03, representing the membership at large to serve for one year; Allen Hazen, '88, representing classes from '89 to '93, to serve for two years; Van R. Lansingh, '98, representing classes from '98 to '02, to serve for five years.

A vote of thanks was passed to Harold Binney, '88, Francis C. Green, '95, Allston Sargent, '98, P. A. Warner, '92, and R. S. Allyn, '98, former officers whose terms have expired.

A resolution was adopted urging members to exert their influence to assist in securing an annual grant of \$100,000 from the legislature of Massachusetts.

At the first meeting of the Board of Governors, February 24, the following officers of the club were elected: William H. King, '94, president; G. W. Kittredge, '77, vice-president; Ira Abbott, '81, treasurer; and Walter Large, '79, secretary.

Chairmen of the following standing committees were appointed as follows: Membership Committee, F. C. Schmitz, '95; House Committee, D. W. Edgerly, '98; Entertainment Committee, R. H. Howes, '03; Class Reunions, F. G. Cox, '03; Business Opportunities, Allen Hazen, '88; Publicity, Van R. Lansingh, '98; Library, Noel Chamberlain, '04; Printing, C. M. Joyce, '03; Representative on Alumni Council, Francis C. Green, '95.

A letter of appreciation was sent to the alumni of Springfield for their interest and enterprise in offering the Institute a new site.

F. G. Cox, '03, will represent the New York club in assisting the Massachusetts alumni to secure the state appropriation asked for.

The board also took measures to cooperate in raising an alumni fund as a

testimonial at the coming celebration of the fiftieth anniversary of the Institute.

Weekly Luncheons in St. Louis

At an informal meeting of Technology men in St. Louis, Mo., February 10, it was voted to have a luncheon every Friday at the St. Louis Lunch Room, 4th and Locust Streets. It is likely that a permanent organization will soon be formed. In the meantime, Amasa M. Holcombe, '04, formerly secretary of the Washington society, will act as secretary. There will be two or three smokers this winter at the University Club or some other convenient place, and it is likely that a small council will assist in carrying out any arrangements of a social nature that may be undertaken. M. L. Emerson, '04, of Boston, who was in St. Louis at the time, was present at the meeting.

A New Mining Society

Among the directors of the newly organized Mining and Metallurgical Society of America, is Dr. Robert H. Richards, professor of mining engineering at the Institute. The purposes of this society are scientific, educational and social, the object being to bring together those who are particularly qualified by knowledge and experience in mining or allied work. Walter R. Ingalls, '86, editor of the *Engineering and Mining Journal*, is also one of the directors.

Effect of Ultra-Violet Rays

An interesting piece of research work is now being carried on at the Institute by Maurice R. Scharff, '09, graduate student and assistant to President MacLaurin, on the effect of ultra-violet rays on living organisms. The experiments are being conducted with a view to determining the practical value of these rays in destroying bacteria and other organisms in air and liquids.

First Meeting of 1910

The class of 1910 held its first post-graduation gathering when over two-score of its members assembled for a "get-together" dinner at the Boston City Club on the evening of Saturday February 25.

A feature of the evening was the "economic productiveness test" in which thirty-eight of the representatives of the "working class" recorded their February salary. The results were interesting: four men claimed over \$100, the highest being \$150; three men received less than \$50, the lowest being \$44; the average figure was \$72.34.

Songs, cheers and the menu kept every one busy from the start. After dinner each man in turn arose and stated where he was located, and whether or not he was still in a blessed state of singleness. The latter statement was always eagerly awaited. It was remarked that before the Institute moves, the burning question of class baby will probably be settled.

Those present were: K. P. Armstrong, A. J. Beach, L. E. Briggs, M. A. Coplan, A. Curtis, A. H. Curtis, O. J. Crommett, L. H. Downs, Jr., A. A. Gould, C. E. Green, H. A. Hale, Jr., G. James, E. A. Kollen, F. R. Lufkin, H. F. Miller, J. B. Myrick, A. R. Nagle, J. W. Northrup, D. Peabody, H. R. Perry, F. J. Pitcher, M. D. Price, T. C. Quirk, N. Ransohoff, G. B. Reynolds, L. E. Sawyer, J. Scheuer, N. S. Seeley, C. H. Shaw, W. Spaans, R. H. Taylor, R. Torrey, A. P. Truette, W. R. Waldo, R. P. Watson, J. T. Whitney, B. S. Wholgemuth and C. W. Wilson. Bergen Reynolds officiated, and was occasionally heard above the uproar.

New Register of Former Students

It has been decided to proceed at once with the preparation of a new edition of the Register of Former Students which shall be as nearly correct as is possible to have it. The amount of work necessary to produce such a publication will probably require six or eight months so

that it may not be published until the end of this year.

A special request is made of all former students of the Institute to assist in securing correct addresses for men whose addresses are not known or are uncertain. Please communicate with Walter Humphreys, Registrar, if you can give any information in this connection.

The Register of Former Students is one of the most important publications that the Institute has ever issued and the new edition will be welcomed by the alumni.

Tech Men Head the Revolution

The revolution in Mexico has an interest for Technology men inasmuch as the leader, Francisco Madero, is the father of three former students of the Institute,—Alfonso, '01, Emilio, '02 and Julio '07. One of the sons is connected with the revolutionist junta with an office in New York and the others are actively engaged in the revolution, one of them being in charge of the transportation of all the troops. The Madero family is one of the oldest and wealthiest in the state of Coahuila. Three other Madero boys from another branch of the family were also Technology students. This branch, however, is understood to be out of sympathy with the revolution.

Revision of Qualitative Analysis.

The research laboratory of physical chemistry of which Dr. A. A. Noyes is director and with which Dr. Lewis is associated, has taken up again its work in the systematic revision of qualitative analysis. Qualitative analysis has been built up piecemeal on the foundations furnished nearly a century ago. The science has been in need of revision, and this Professor Noyes has supplied so far as the metallic elements are concerned. Under his direction Dr. H. G. Falk has started on a new scheme of determining the analysis of the acid elements.

Cosmopolitan Club Active

The Technology Cosmopolitan Club gave a very novel entertainment to its members on February 24th when the entire program was presented by the Latin-American members of the club. The men taking part were from Argentine Republic, Chili and Cuba.

Leopold L. Sandstein, '11, of Christ Church, New Zealand, who presided, introduced David Montt, '12, of Santiago, Chili, nephew of the late President of that country, who delivered an address on the advancement of the Latin-American races which was followed by a discussion in which José M. Cadenas, '13, of Havana, led. The musical program was furnished by Leon R. O'Farrell, '14, of Buenos Ayres, who sang native songs. Daniel Uribe, of Colombia, rendered some Colombian songs, and Milo Lemus, of Cuba, a student at the New England Conservatory of Music, gave several selections on the piano.

February 25th was British night. The program consisted of an illustrated talk on Australia by L. H. Lehmaier, '13, of Australia; a song by H. R. L. Fox, '12, and an illustrated lecture on the British Provinces describing Cape Town, the Kimberley mines and the primitive customs of the natives, by E. W. Mason, '12; a violin solo by B. H. Morash, '12, and an illustrated talk on New Zealand by Edward Hurst, '13; a talk by R. J. Murphy, '14, on Newfoundland, illustrated with lantern slides; also an illustrated talk on the Fiji Islands by L. M. Sandstein, '11. Three of the students from the British provinces gave a blood-curdling imitation of the Maori war cries. The other foreign nights are as follows: Chinese night, March 11, American night, March 25, French night, April 8th, Japanese night, April 27, German and Ottoman night, May 13.

A Museum of Public Health

Prof. C.-E. A. Winslow, '98, of the New York Museum of Natural History, proposes to develop scientific work along practical lines directly beneficial to the

masses of the people. He plans to build up his new department principally along the lines of bacteriology and municipal sanitation. In the bacteriological laboratory now being equipped there will be kept in cultivation a complete collection of bacteria which will be secured from the various colleges and health laboratories all over the world. The museum will thus act as a central bureau for the interchange of specimens of bacteria. This will afford an unusual opportunity for an improved biological classification.

The Museum of Municipal Sanitation will be the only one of its kind in the country, Germany alone now possessing such expositions.

Coöperating with the Congress of Technology

A meeting of the Association of Class Secretaries is called for March 16th to take action on the participation of the classes in the Congress of Technology on the occasion of the fiftieth anniversary of the signing of the Institute's charter.

It is understood that some of the fraternities at the Institute will invite visiting alumni members to luncheon on April 11. This coöperation of effort will assist in bringing the attention of the alumni to the Congress. It is also expected that the graduate and non-graduate members of the Osiris will meet at breakfast on April 11.

Aid for Thermal Research

At the recent meeting of the Rumford Committee of the American Academy, a grant of \$400 was made to Prof. Charles L. Norton, professor of heat measurements at the Institute of Technology, to aid research on insulation.

With Tech as with Adam and Eve, the world is all before it where to choose, but Tech has not had a fall, though it has eaten freely of the tree of knowledge.

—*Boston Herald.*

New Corporation Members

After the meeting of the Corporation of the Institute held March 8th, it was stated that the Institute has decided on a site that it would like to have if it can secure proper terms, and it is further stated that that site is in greater Boston. The Corporation is considering a number of sites, but as negotiations are still pending, no action was taken at the meeting. The Institute has a certain amount fixed for the price it will pay and if the site in question cannot be secured for the amount of money within the limit decided on, then another tract will be negotiated for.

Three new life members of the Corporation were elected at this meeting; T. Coleman du Pont, '84, president, E. I. du Pont de Nemours Powder Co., Wilmington, Del.; Arthur F. Estabrook, of Estabrook & Company, bankers of Boston, and John M. Longyear, of Brookline, Mass.

The alumni term members of the Corporation elected are Henry Howard, '89, H. A. Morss, '93, and Arthur Winslow, '81.

Power Station Design

Prof. E. F. Miller, '86, has begun a new course of lectures in power station design at the Institute this term. The problem in hand at the present time is the designing of two rubber mills of given outside dimensions and horse-power of engines. The temperature of the rooms, conductivity of the walls, amount of air circulated, etc., are also specified. Students are required to furnish a design that will give the best economy for the amount of money invested.

Newton Scholarship

Technology men in Newton are actively engaged in raising funds for a scholarship at the Institute of Technology

to be given yearly to a graduate of the Newton High School. The reward is to be made in recognition of personal merit and of high scholarship, particularly in science and mathematics, and shall not imply pecuniary need. The committee is aiming to secure a fund of \$6,000 for permanent maintenance. Mr. Harry J. Carlson, '92, is secretary of the joint committee.

Technology Club of Northern Ohio

The Technology Club of Northern Ohio is to have a meeting on March 11th

BIG AWAKENING

Boston Tech

We are going to get together on

March the Eleventh

You will be advised as to details later on

Remember the Date

SOMETHING DOING IN CLEVELAND

about the time the REVIEW goes to press
This is the way the notice of the meeting reads:

The annual dinner of the Northern Ohio Technology Club will be pulled off at the Hermit Club, Saturday evening, March 11th, at seven o'clock.

Things at Old Tech are booming and every effort is being made to make this dinner a huge success. Wear any old thing. All those desiring to make speeches will be accommodated. Bring plenty of conversation and lots of close harmony. Bring your singing voice.

If you know of any Tech men whose names you have any reason to suppose are not on our lists make sure that they will be with us. Buffalo, Cincinnati, Detroit, Springfield, etc., are "raising Ned" and its up to us to beat them.

A CHALLENGE FROM DETROIT.

We have received a challenge from the Detroit Association daring us to meet them at Put-in-Bay next summer and engage in any kind of contest and claim they can beat us at what we can do best. Let's show 'em up.

The enclosed postal is an important item. If you will sign and mail at once, it will greatly assist those in charge.

About Sites

A feeling against moving away from Boston and the problem of taxation on college property in that city are two reasons against moving Technology to Cambridge, in the opinion of President Richard C. Maclaurin, expressed last evening.

It is known that among the sites now under consideration by the Executive Committee of the Corporation two or three are in Cambridge. The Cambridge Board of Trade has assured Dr. Maclaurin that every means would be used to obtain land for the college along the river front at reasonable prices.

"The Corporation has not definitely decided on any particular location," said Dr. Maclaurin last night. His statement on the Cambridge location is as follows:

"The advisability of our going to Cambridge is being urged upon Technology from a large number of sources. Invitations have been received from the mayor of Cambridge, the Cambridge Tax Payers' Association, Cambridge Club, Citizens' Trade Association and many prominent business and educational men of the city.

"I have also received numerous petitions from the people of Cambridge asking for 'favorable consideration to locate the Institute of Technology on land bordering on the Charles River esplanade.'

"There are many sites bordering on the Charles river and a number of them offered us have many attractions from the point of accessibility and expansion. Some of this land can be obtained at a very reasonable price.

"The objections of going to Cambridge mainly refer, first, to moving the Institute of Technology away from Boston, and, secondly, to taxation of college property.

"Technology has been associated throughout its history with the city of Boston and there is a strong feeling that the school of applied science should continue in that association."

Regarding the other objection, he said:

"There has apparently been much unrest in Cambridge by certain few people at having so much property of the city

exempt from taxation. From this alone there might be serious objection to increasing the amount of property which would come outside the taxable list.

"If the Greater Boston plan should go through, the first objection would be removed, and no one can doubt that the institute going to Cambridge and locating on the water front would greatly add to the wealth of the city and save the Charles River esplanade from being occupied by manufacturing plants and other commercial structures."—*Boston Herald*, March 10.

The Tallest Office Building

The tallest office building in the world is to be built in New York from the designs of Cass Gilbert, '78, architect. It will be a fifty-five story building between Barclay Street and Park Place. It will be 750 feet high or about 50 feet higher than the Metropolitan Tower and nearly 100 feet above the Singer Tower. It will be exceeded by only one building in the world, the Eiffel Tower, 980 feet high. It will probably cost over \$12,000,000.

Grant from the Carnegie Institution

The Carnegie Institution has just made to Prof. A. A. Noyes a grant of three thousand dollars for carrying forward investigations on the properties of salt solutions in relation to the ionic theory. Professor Noyes will make a report of progress to the present time in a paper before the American Philosophical Society on April 22.

The Geology of Europe

Prof. H. W. Shimer, of the geological department, is preparing to deliver a course of lectures next year on the geology of Europe. During the summer he will traverse the continent from Naples to Norway with a run into France and across to Great Britain to complete the material for this course.

Tuition—Fees—Scholarships

Higher education is self-supporting only under very exceptional conditions. Whenever it is made so there must be either inadequate or underpaid instruction, or the tax upon the students must be excessive. No modern state can afford to have higher education restricted to those who can bear its cost, or to let it depend upon the accidents of private generosity. The extent to which students in different parts of the country pay for their own education in engineering branches has been recently investigated on behalf of the University of Nebraska, with the following results. The figures cover *all fees* except laboratory charges for four-year courses.

Univ. of Cal.	\$32
“ “ Neb.	34
“ “ Kan.	50
“ “ Col.	65
“ “ Ill.	110
“ “ Minn.	120
“ “ Mo.	120
“ “ Wis.	140
“ “ Mich.	508
“ “ Yale	514
“ “ Cornell	716
“ “ Harvard	716
M. I. T.	1000

The students of the Institute contributed towards its income in 1909-10 more than \$335,000, or nearly 60% of its total income.

Scholarship funds at the Institute now amount to more than \$344,000 besides the state scholarships and the Edward Austin Fund of \$375,000, which is largely employed for this purpose. These represent the admirable generosity of private givers to needy students, but to *every student who receives a full scholarship the Institute must make an additional contribution nearly as large as the scholarship*. The education of the student at the Institute costs directly for the four-year course about \$1,900. Of this amount the student pays \$1,000, the state about \$60, the United States about \$40, while the remaining \$800 represents present or past generosity of friends of the school. If the state grant

is increased to the extent desired it will still represent a contribution of only about one-sixth of the annual outlay, or one-eighth the total cost.

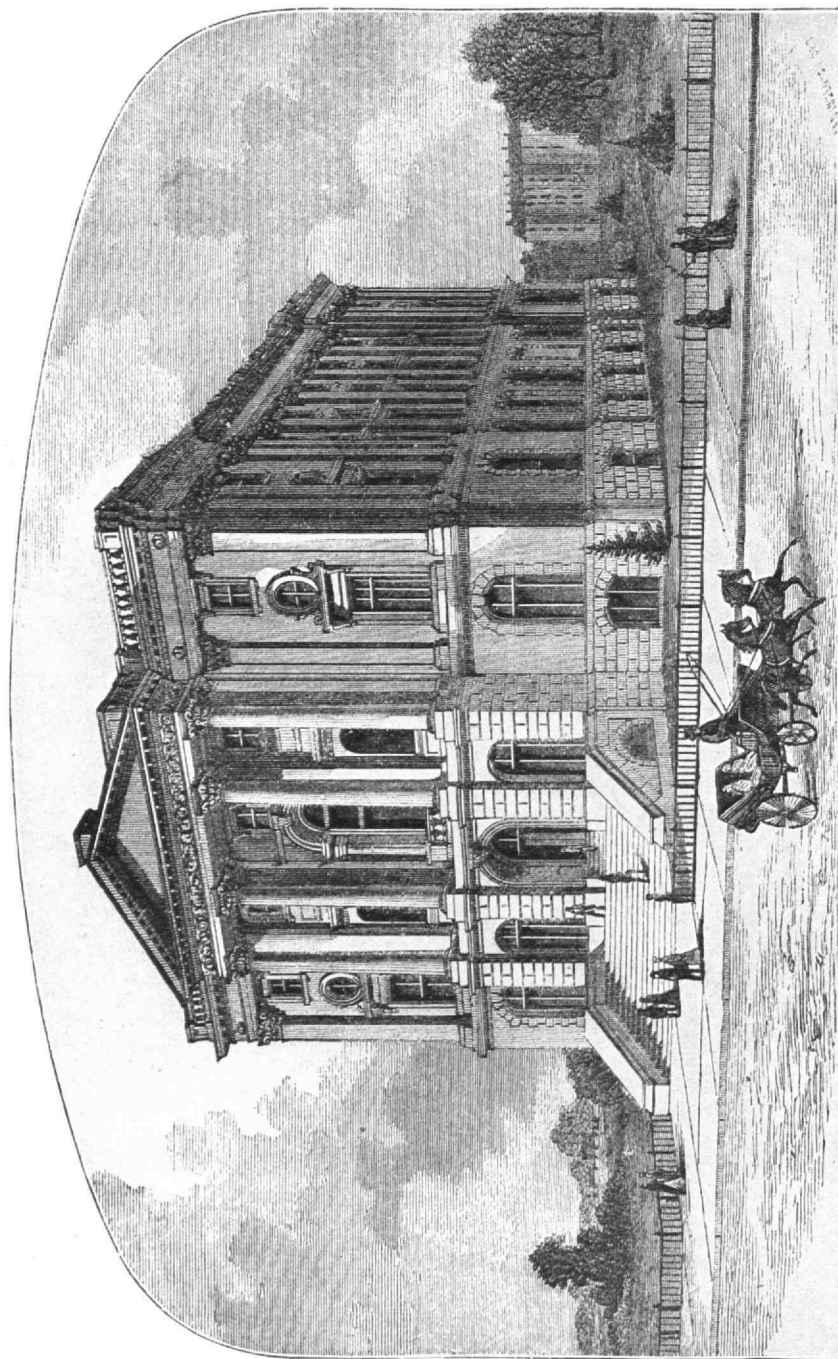
Additional free scholarships would help the students, but increase the burden on the school.

As Others See Us

The last (October) issue of the *TECHNOLOGY REVIEW*, published by the Alumni Association of M. I. T., contains the announcement that the “tremendous increase of alumni interest in Technology affairs all over the country has made it necessary for the Alumni Association to establish closer relations with its members, and it has therefore been decided to issue *THE TECHNOLOGY REVIEW* monthly,” omitting August, September and October.

This exhilarating development of Tech spirit is largely a new growth, dating from the days when the merger with Harvard was under discussion. The *REVIEW* is serving an admirable purpose in getting the alumni in touch with each other as well as with their Alma Mater. This issue contains 55 large pages of “News from the Classes.” Beginning with 1868, there are reports from 30 different classes. Each is headed by the name and address of the secretary. The material in these reports is of the most diverse character,—all the way from mere address lists, or “vital statistics,” to reprints of paragraphs from magazine articles and political platforms by alumni and to extracts from many individual letters. From 1882 on, only two classes are not represented. The entries are informal, human and often breezy. It is no wonder that every live alumnus looks forward with interest to the coming of each number of the *REVIEW*. Its subscription price is now included with the regular annual dues of the Alumni Association.—*Worcester Polytechnic Institute Journal*.

Local alumni associations will hold meetings April 11 and get in touch with Boston.



THE ROGERS BUILDING.—FROM THE SEVENTH ANNUAL CATALOGUE

TECHNOLOGY'S FIFTIETH ANNIVERSARY

Great preparations for the Congress of Technology to be held April 10 and 11—The smoker and banquet will be memorable affairs—Delegations coming from many states

During the last few weeks the newspapers throughout the length and the breadth of the land have had much to say about the Institute and its influence on the industrial development of the country during the last half century. With no dissenting voice they unite to do honor to this pioneer institution whose influence is now being felt in such a direct way in the arts and industries of the nation. As the *Chicago Evening Post* recently said, "One does not need to be an infatuated alumnus of the institution to appreciate the noteworthy part it has played in the development of the United States," for wherever the rails of advancing civilization have penetrated, wherever the earth is giving up its treasures at the beck of the mining engineer, wherever electricity pulsates into light and power, wherever wheels turn and the elements are harnessed to produce or refine, there is Technology best known and appreciated.

The anniversary we are about to celebrate is chiefly notable because this will be the beginning of a period of still greater usefulness. Tech men have been quick to realize that it is the most important event in the recent history of the Institute, and the local alumni associations in the nearby states are preparing to send large delegation to the Congress. The secretaries of the various classes are arranging for large class demonstrations; the various fraternities have arranged luncheons for the visiting brethren on Tuesday; Osiris will have a breakfast on Tuesday morning and the undergraduates are arranging for a field day Monday afternoon and a large dinner on Wednesday evening, which every undergraduate may attend.

A bureau of information will be established in the library of Rogers Building, where a committee, with Prof. C. F. Park, '92, as chairman, will attend to all inquiries.

The public sessions of the Congress which will consist in the presentation of the notable papers already announced will be held in Huntington Hall and various lecture rooms. The meetings of the different sections will be bulletined in the corridor of Rogers Building.

Nearly all the classes have arranged to meet together for dinner at 6 o'clock on Monday, April 10, and go in a body to the anniversary smoker at Symphony Hall at 8'clock. This smoker will be of an unusual character. George B. Glidden, '93, chairman of the committee, has arranged a program which will be most interesting and unique. Among the features to be presented will be special acts by the Chinese and South African members of the Cosmopolitan Club, specialties selected from the olio of the performance recently given by the "Chocolate Soldiers" minstrel aggregation, selections by the Glee Club, etc. Please understand, however, that there is to be no set program. It is rather intended to be a social evening where members of the various classes can mix and fraternize. At intervals the various specialties that have been provided will be produced. The most irresistible of all the features of the evening will be the reproduction of some choice pictures from old Techniques. These lantern slides are being prepared under the direction of Prof. C. E. Locke, '96, Mr. G. DeW. Marcy, '05, and Prof. Allen W. Rowe, '01. Souvenir pipes and tobacco and light refreshments will be provided by the committee in charge.

Arrangements for the banquet on Tuesday evening, April 11, are being made on an imposing scale, and it is expected that every seat in the hall will be taken. Provision is now being made to entertain one thousand people. Charles C. Peirce, '86, is chairman of the committee having the banquet in charge, and the decorative features have been entrusted to Prof. H. W. Gardner, '94, assisted by a committee. This committee on decoration has been making a thorough study of the possibilities at Symphony Hall and a number of new and brilliant effects are contemplated. It is to be remembered that to this banquet have been invited a large number of the substantial citizens of Boston and vicinity who are interested in the Institute, and that this anniversary will mark the beginning of an active campaign for funds from the general public. It is most desirable that there be a large alumni attendance. The speakers will be men of national reputation in

the fields of industry, science and education. The governor and mayor have been invited and Dr. Maclaurin will preside. Among those that have been invited to be the guests of the Corporation are the living members of the original Corporation and Faculty and presidents of national scientific and engineering societies.

It is expected that some interesting photographs will be thrown on the screen during the banquet, and that during the evening important announcements may be made. The price of tickets to the banquet will be \$5.00 each, and alumni purchasing a banquet ticket will also receive a ticket to the smoker. The members of the senior class will be considered alumni on the occasion of this Congress. Balcony tickets for the smoker will be sold at fifty cents each to alumni, their friends and to undergraduates. The seats in the balconies will be filled with ladies and their escorts as is usual at Pop concerts. On the occasion of the banquet, alumni and others purchasing a banquet ticket will be supplied with as many tickets for the balcony as they desire. Undergraduates who wish to take their friends to the balconies on that evening may purchase tickets at fifty cents each. Application for tickets should be made to Walter Humphreys, secretary, M. I. T.

Steamer Tested by Naval Architects

The department of naval architecture of Technology has just completed an important test at sea of a new steamer, the *Sankaty*, built by the Fore River Works for service between New Bedford and Nantucket. The company requested the Technology men to do the testing on account of new apparatus of special efficiency which has been devised by Institute authorities. The mile was covered twenty times at slightly increasing speeds, and then a four-hour run at about maximum speed was undertaken up the coast and return. The *Sankaty* is a steel screw steamboat of 188 feet length with triple expanding engines. The tests have not yet been figured. The same department is getting the *Froude* ready for another season of experiment in the Charles River Basin. The *Froude* is the model boat that was in use last season, and will be put this year into experiments to determine the inter-action between propeller and hull.

THE BEGINNING OF THE INSTITUTE

Reprint of an article by James Phinney Munroe in the *Technology Quarterly* for May, 1888.

In an obscure corner of the *Boston Daily Advertiser* for Feb. 21, 1859, appears the condensed report of a meeting of "Individuals representing Associations of Agriculture, Horticulture, Art, Science, and various Industrial, Educational, and Moral Interests of the State," the results of whose deliberations were to be of far-reaching importance, and whose matured plans were to found an institution known throughout the civilized world. The account states that the meeting held in the library of the Boston Society of National History (then located on Mason Street), on Feb. 18, 1859, was attended by about forty gentlemen. Mr. Marshall P. Wilder was elected chairman, and Dr. Samuel Kneeland, Jr., secretary. After the formalities of organization, the chairman stated the object of the meeting to be that of taking steps toward memorializing the Legislature for a grant of land belonging to the Commonwealth, in aid of a plan for a conservatory of art and science. "The reading of a portion of the Governor's message in which he refers to the value of the public lands, and advises a certain disposition to be made of them, brought the matter fairly before the meeting."

Professor Agassiz, Hon. Alex. H. Rice, Mr. John D. Philbrick, and others spoke. While one of the gentlemen advocated the reservation of an open space of Back Bay land, for the reason, chiefly, that the residents of Beacon Hill, heretofore cooled in summer by the breezes from the Back Bay, might not suffer by the filling in of that body of water, and although another of the speakers had so mean an idea of the enterprise as to urge the purchase of the Hancock estate, then on sale, the majority of those present were more serious in purpose and more generous in plan than these, and heartily indorsed the proposal for the reservation of a large tract of the still unfilled Back Bay. A committee of seven was appointed with power to memorialize the Legislature,

in such manner as seemed desirable, for purposes of the proposed "Conservatory of Art, Science, and Historical Relics."

The committee thus commissioned lost no time in preparing and presenting their petition, for upon March 31, 1859, two days before the close of the session, the joint special committee of the Legislature appointed to investigate the matter presented their report* to that body. This report contains the memorial; and as the latter is the first definite exposition of the idea which had for so long been germinating in the minds of its promoters, it may be of interest to transcribe it with some fullness. Its main points are as follows:—

"The undersigned . . . respectfully represent . . . that in our opinion a most effective method of making those lands" [belonging to the Commonwealth, lying near the Public Garden in the city of Boston] "available in promoting education, as well as directly developing the wealth of the State, would be for the Legislature to pass a Resolve reserving from sale a portion of said lands, and dedicating them as a space to be used in all coming time for the erection of a building or buildings by various institutions for public benefit, which in the aggregate would constitute and might be known as the Massachusetts Conservatory of Art and Science.

"The Committee, without undertaking to specify in detail the extent of space to be reserved or the specific purposes to which it should be dedicated, would simply suggest the character of a few leading institutions, which, if once established on the grounds, would form a nucleus around which would cluster kindred associations of immense value to the people of the State.

"Taking the Commissioners' Plan as a basis for illustration, we would suggest the reservation of as much as four squares for this purpose.

"Section No. I. might be devoted to collections of implements, models, and other objects pertaining to Agriculture, Horticulture, and Pomology.

"Section No. II., to Natural History, Practical Geology, and Chemistry, with ample room for museums of specimens.

"Section No. III., to those institutions devoted to the development of Mechanics, Manufactures, and Commerce.

"Section No. IV., to Fine Arts, History, and Ethnology.

"The space reserved for each section should be ample for these and all institutions of a kindred character which the future progress of the State may develop. . . .

"It is not proposed to merge the different institutions in one,—the perfect individuality of each being retained in every respect,

*House Doc. No. 260, 1859.

having nothing necessarily in common but the general fostering care of the State. . . .

"It is not proposed that the legal title to the land be conveyed, but the fee to remain to the State. . . .

"The Committee have reason to believe that there are now existing several well-established institutions which will avail themselves of the privilege under the reservation, if made, and will erect a building or buildings thereon for their respective uses as soon as the land can be put in readiness for occupation. . . .

"In conclusion, the Committee, while heartily sympathizing with the efforts now in progress to form a Museum of Natural History and Comparative Zoölogy under the auspices of Professor Agassiz, at Cambridge,* for the development of abstract science, desire to coöperate with such labors in the building up of institutions of a more directly practical character, which will enable the masses of the people engaged in industrial occupations more effectually to avail themselves of the advantages to be derived from the labors of those who are wholly devoted to purely scientific research."

This first exposition of the plans of its promoters shows their scheme to have been essentially a popular one. They hoped to educate the people,—to so train artisans and mechanics, that the relations between them and the men of science might be made more close; that the theory of the latter might be verified and checked by the work of the former, who, in their turn, should derive incalculable benefit from the experiments and researches of the scientists. Popular lectures, skillfully arranged museums, published reports of scientific research, were to be the means for education, and examinations and other tests leading to diplomas, were to form the immediate aim and measure of the work.

The Legislative Committee, in transmitting the memorial to the General Court, take it up point by point, enlarging upon and emphasizing the several details. They say: ". . . The objects contemplated in the memorial under consideration assume a position of great importance as an educational measure, and in the opinion of your Committee the plan, considered merely as a financial measure, should not be regarded with indifference by the State. Her future industrial progress will be greatly influenced by the practical educational facilities which these institutions, by their union, are designed to afford. The existence of such

*Between 1859 and 1874, \$355,707.67 was appropriated by the General Court of Massachusetts in aid of this institution.

grand, practical schools in Europe requires of us to take all possible advantage of our resources in this direction, under the penalty of taking a second-rate position among the nations; and this no true American will be content to do without a struggle for the supremacy." After enlarging upon the educational advantages of the scheme proposed, after pointing out the benefits accruing to the State, to its people and industries, by such exhibitions and lectures as the plan of the memorialists contemplates, the committee consider the practical side of the question, the material advantage to the State, in the following words:—

"The Committee will venture an opinion, proved by all experience, that the surest way of increasing the value of unoccupied land, is to leave open spaces for public buildings like those proposed in this plan. The very fact of the location of these structures there would bring the land more rapidly into the market at increased prices, and secure a first-class population from the beginning. Unless some such plan be adopted, few persons would be likely to purchase except in the immediate vicinity of the Public Garden.

"The Committee are of the decided opinion that the reservation from sale of the land asked for in this memorial, will tend greatly to enhance the value of the remaining lands; and in their judgment this increase will equal the sum which the State would receive from the sale of the reserved portion. . . .

"Ample space is necessary in the beginning, in order that the various associations disposed to profit by it be neither crowded nor amalgamated. Space is the more important, as it is desirable that every county in the State should there have a space for the display of its products in every department of industry. . . .

"The land should remain open for some years, to allow associations, industrial and commercial, yet unformed, to avail themselves of the reservation.

"Finally, your Committee would state, that as the societies are ready to unite, so are the people apparently prepared and eager for such an association of institutions as would be established by their union. This practical age demands practical, as well as theoretical, education. . . . And your Committee are of the opinion that the reservation of the land . . . should be made, believing it will be of advantage to the State, both in an educational and financial point of view.

"The Committee, however, notwithstanding an entire unanimity in these views, are united in the feeling that the present is not a propitious time for action in the premises, and therefore request to be discharged from the further consideration of the subject."

The unpropitiousness of the time had reference to the lateness in the session, and to the fact that many important bills were, as usual, being rushed through, and would inevitably push this petition to the wall. Upon the very day of the presentation of this report was passed the educational bill of 1859,* authorizing the reservation of one half the net proceeds from the sale of the Back Bay lands belonging to the State, after payment of \$300,000 worth of scrip issued in 1856, to be divided as follows: To the school fund, 50 per cent; to the Museum of Comparative Zoölogy, 20 per cent; to Tufts College, 12 per cent; to Wesleyan Academy, Amherst College, and Williams College, 6 per cent each; provided that when the Museum shall have received \$100,000, and the others in like proportion, the rest should go to the school fund. The only conditions laid down in this grant were, that the institutions should raise an amount equal to the State grant, by private subscription, and that Tufts, Williams, and Amherst Colleges should each maintain three free scholarships.

Notwithstanding the obvious inexpediency of legislation under such circumstances, an impression seems to have prevailed that this scheme for the promotion of popular scientific education had utterly collapsed. Appended to a printed copy of the memorial, accompanied by the Legislative Committee's report and issued by the memorialists, is found the following statement:—

“The Committee are desirous of correcting a false impression, which seems to prevail, that the plan has failed, and will state, in explanation, that it was in their opinion inexpedient to press so important a subject at the close of the session, especially as, if favorable action had been taken, the land would not be ready for occupancy this year. The committee did not expect definite action during the last session, and feel satisfied with the progress made, confident that in the ensuing year they shall be able to present an array of facts and arguments to the next Legislature that shall secure the establishment of these much needed educational institutions.” (*Signed.*) Marshall P. Wilder, Geo. W. Pratt, Sam'l H. Gookin, Alfred Ordway, M. D. Ross, Alex. H. Rice, E. S. Tobey, James M. Beebe, Prof. Wm. B. Rogers, Dr. S. Cabot, Jr., Amos Binney, Dr. S. Kneeland, Jr., Chas. L. Flint, B. S. Rotch, J. D. Philbrick, *Committee.*

In this list, much enlarged from that appointed at the first

* Chap. 154, Sec. 3, Acts and Resolves of 1859.

meeting in the Rooms of the Natural History Society, appears for the first time the name of Professor Rogers, without whose controlling mind, inexhaustible patience, and undying enthusiasm, the Institute of Technology, zealous as were its other supporters, might never have been, and certainly could not have passed with safety through the dark days in store for it.

William Barton Rogers, son of Dr. Patrick Keer Rogers, Professor of Chemistry and Physics at William and Mary College, was born, Dec. 7, 1804, at Philadelphia, being the second of four brothers, all of whom were afterwards distinguished for scientific attainment. At the age of twenty-four, his father having died, Wm. Rogers succeeded to the professorship, leaving it only to accept the chair of Natural Philosophy and Geology at the University of Virginia. To the duties of this distinguished position were immediately added those of State Geologist, to which office he was appointed by the Legislature of Virginia. The immense labor of making the survey of his adopted State, extending over seven years (1835-1842), in no degree abated his enthusiasm in his professorship. Pervent in imagination, though never unfaithful to the absolute truth of nature, gifted with eloquence extraordinary in itself, and doubly so in a student of the exact sciences, he could hold the most indifferent audience spell-bound with the magic of his expositions. His students at the University of Virginia gave no perfunctory attention; they listened because they could not help it. He not only forced them, by his marvelously clear and virile presentations of scientific facts and theories, to give strictest heed to him, but he aroused for the study itself an enthusiasm which did not die with the sound of his voice. He animated the cold marble of science, kindling a life-spark which no subsequent neglect could wholly extinguish.

Much of his work was done in conjunction with one or the other of his brothers, Henry D. and Robert E. Rogers. The power of joint investigation and publication exhibited in the work of these three minds, each endowed in so unusual a degree, is not the least remarkable fact in the history of this gifted family.

In 1849, Professor Rogers married Miss Emma Savage, daughter of Dr. James Savage, of Boston; and largely because of this union, he, in 1853, resigned his professorship at the University of Virginia, and took up his residence in the city for which in the thirty years of his life there, he was to do so much.

In the period between his coming to Boston and 1859, when the Conservatory of Art and Science was first publicly proposed, Professor Rogers was active in writing and lecturing upon scientific subjects. Although his comprehensive mind interested itself in all branches of science, his attention at this time was especially turned toward Physics, to the study of which he applied himself with his wonted enthusiasm. Doubtless, too, throughout these six years, he was sowing seed in the good ground of the enlightened understanding of Boston's merchants and manufacturers—seed which was to be tended and watched over by him far beyond the limit of his physical endurance, and the full vigor and promise, if not indeed the perfect fruition, of which he lived long enough to see.

Fortunate in the alliance of his thorough scholarship, patient enthusiasm, and extraordinary personal power, but impelled no less by their own zeal than by that of Professor Rogers, the committee named above, with additional members, presented a new memorial* at the next session of the Legislature. This, which met no better fate than the first, was essentially a repetition of it, somewhat more extended, and containing minor changes. To quote the petition:—

“In conclusion, your memorialists would remark that, although the present application coincides in its general purport with the memorial (House Doc. 260) which they had the honor to submit to the General Court last winter, it embodies the more mature results of the inquiries, and deliberations in which they have since been zealously engaged.”

Petitions in aid of this second memorial were presented by the Boston Society of Natural History, the Boston Board of Trade, the American Academy of Arts and Sciences, the Massachusetts Charitable Mechanic Association, and the New England Society; the endorsement of each of these distinguished bodies, representing such diverse interests, being most cordial and hearty. A favorable bill was presented, and passed the House, but was, late in the session, rejected in the Senate. Upon motion to reconsider the vote of rejection, the bill was laid upon the table.

Although many meetings, more or less formal in character, of the “Committee of Associated Institutions,* of Science and Art,”

*House Doc. 13, January, 1860.

as it was now called, must have taken place during the winter of 1859-60, no record is known to exist of them, the only memorandum of the busy but silent work done at that time in furtherance of the scheme, being found in a pamphlet published in 1861,* in which the statement is made that,

"Believing that the failure of their previous appeal to the Legislature was, in part at least, due to the incompleteness and vagueness in which they had presented this department of their general plan" [Practical Instruction in the Arts and Applied Sciences], . . . "the Committee determined on taking such steps as were practicable toward the organization, in a preliminary form, of an institution of this character.

"Accordingly, at a meeting held May 28, 1860, the Committee assigned to a sub-committee, consisting of W. B. Rogers, E. B. Bigelow, J. M. Beebe, M. D. Ross, and C. H. Dalton, the duty of preparing and reporting the plan of an institution designed for the advancement of the Industrial Arts and Sciences and Practical Education in the Commonwealth."

Four months later, the sub-committee, through its chairman, issued a call for a public meeting to be held at the rooms of the Board of Trade, on October 5, 1860, and at this meeting was read the report of the Committee, outlining the plan of the Institute of Technology. The Conservatory of Arts and Sciences, with its huge collections, supplemented by instruction, is found to have given place to a school, in which the instruction is to be first, and the collections secondary, supplementary to the theoretical and practical teaching.

The pamphlet† is so clear in its exposition of the objects contemplated, its authors are so thoroughly master of the ideas and projects therein contained, that it is a temptation to transcribe it entire. A rough sketch must, however, suffice.

After reciting the benefits to be derived from institutions of the nature contemplated, especially in a community, like Massachusetts, largely devoted as it is to manufactures, it says:—

"With the view of securing the great industrial and educational benefits above alluded to, it is proposed to establish, on a compre-

*An Account of the Proceedings Preliminary to the Organization of the Mass. Institute of Technology. Pph., 8vo., pp. 23. Boston, 1861.

†Objects and plan of an Institute of Technology [Prepared by direction of the Committee of Associated Institutions of Science and Arts, and addressed to Manufacturers, Merchants, Mechanics, Agriculturists, and other friends of enlightened industry in the Commonwealth]. Pph., 8vo., pp. 29. Boston, 1860; 2d ed., 1861.

hensive plan, an institution devoted to the practical arts and sciences, to be called the Massachusetts Institute of Technology having the triple organization of a Society of Arts, a Museum or Conservatory of Arts, and a School of Industrial Science and Art."

It then states, at some length, the duties of the several committees, the sub-divisions of the collections, and the departments of the school.

The development of the Society of Arts and the School of Industrial Science is sufficiently well known. The Museum of Arts needs but money and space to become an accomplished fact. The Journal, which the Committees contemplated, "besides setting forth the proceedings of the Society, and the condition and progress of the Museum and School of Industrial Science, should furnish a faithful record of the advance of the Arts and Practical Sciences at home and abroad," has never been started, for the reason, perhaps, that the first two objects are attained by the "Proceedings of the Society of Arts" and the Catalogues and President's Reports published annually, while the third aim is amply met by the multifarious scientific journals and reports continually brought forward. In relation to the School, the Report says:—

"In arranging the plan and courses of instruction, provision would be made for the two classes of persons for whose benefit they are designed,—those who enter the school with the view of a progressive systematic training in applied science, and who have the preliminary knowledge, as well as time, for a continuous prosecution of its studies; and the far more numerous class, who may be expected to resort to its lecture-rooms for such useful knowledge of scientific principles as they can acquire without methodical study, and in hours not occupied by active labor.

"The former would of necessity be subjected to classification and direction in their studies, as well as examinations and other tests of acquirement in the progress and at the close of their terms. The latter, without having access to the exercises of the classroom, would be admitted to the courses of lectures on general and applied science, subject only to the conditions and restraints that are usual in public lectures generally." . . .

"In regard to the latter feature of the School we may remark, that as the system of merely popular lecturing in its usual form would be inconsistent with the grave practical purposes which we have in view, it could not be recognized in connection with our plan." . . .

"In the features of the plan here sketched, it will be apparent that the education which we seek to provide, although eminently practical in its aims, has no affinity with that instruction in mere *empirical routine* which has sometimes been vaunted as the proper education for the industrial classes. We believe, on the contrary, that the most truly practical education, even in an industrial point of view, is one founded on a thorough knowledge of scientific laws and principles, and which unites with habits of close observation and exact reasoning a large general cultivation. We believe that the highest grade of scientific culture would not be too high as a preparation for the labors of the mechanic and manufacturer. . . .

"But such complete and comprehensive training can, in the nature of things, be accessible to only comparatively few; while the limited and special education which our plan proposes would, we hope, fall within the reach of a large number whom the scantiness of time, means, and opportunity would exclude from the great seats of classical and scientific education in the Commonwealth."

"It will thus be seen, from the peculiar character and objects of this Department of the Institute, that it could not interfere with the interests of the established schools of learning devoted to general literary and scientific education."

The "Object and Plan" was distributed widely through the State of Massachusetts, accompanied by a circular asking the attention and coöperation of those receiving it. Two months later followed another circular, announcing a meeting to be held in Mercantile Hall, 16 Summer Street, on the evening of Jan. 11, 1861, "for the purpose of adopting measures preliminary to the organization of the Institute, and in furtherance of a petition to the Legislature for a charter, and a portion of the Back Bay lands."

This meeting was largely attended, addresses being delivered by Prof. Benjamin Peirce, the Rev. Dr. Gannett, and others, and formal resolutions were passed associating the subscribers for the purpose of endeavoring to organize and establish "The Massachusetts Institute of Technology," and appointing a committee of twenty to act in coöperation with the Committee of Associated Institutions of Science and Arts, to promote the incorporation of the Massachusetts Institute of Technology, and frame a constitution and by-laws for the government of the said Institute when it shall be established.

The third memorial was, in January, 1861, properly presented to the General Court, and by them referred to a Joint Standing Committee of the Legislature. This Committee made, on March

19, 1861, a report* entirely favorable to the grant, “. . . Believing the objects of this Institution to be of the highest moment to the material and educational progress of the State,” . . . “and believing that the public advantages contemplated in the plans proposed would be wisely purchased by a share of the direct bounty of the Commonwealth.”

“Such, however,” the report of the Committee goes on to say, “is not the kind of aid craved by the petitioners. The land for which they apply has already indirectly and in part, at least, been dedicated to public education. They do not propose to withdraw it from this object but, on the contrary, to give it a new and vastly increased value for educational purposes,” . . . “and your Committee are in favor of granting the prayer of the memorialists to the extent and according to the conditions of the following bill.” Then follows the Act of Incorporation.†

The report of the Committee being accepted in the House, we find that on March 21st the bill proposed was passed to a third reading by a vote of 89 to 33. On the next day a motion to reconsider was made, but did not prevail, and upon the 25th the bill, with the addition of sections 9 and 10, as amendments, was, by the House, ordered to be engrossed; and upon the 29th the same action was taken by the Senate.

Upon April 10, 1861, more than two years after the subject was first publicly agitated, two years of almost constant effort in the face of opposition and discouragement, at an hour when the thoughts of the people were turned more toward impending war than in the direction of measures pre-supposing conditions of domestic peace and well-being, was legally established, by the approving signature of John A. Andrew, Governor of the Commonwealth, the Massachusetts Institute of Technology, in the terms of the following:—

Act‡ to incorporate the Massachusetts Institute of Technology, and to grant aid to said Institute, and to the Boston Society of Natural History.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows:

SECTION 1. William B. Rogers, James M. Beebe, E. S. Tobey,

* House Doc. 171, 1861.

† Section 1-8 only.

‡ Chap. 183, Acts and Resolves of 1861.

S. H. Gookin, E. B. Bigelow, M. D. Ross, J. D. Phillbrick, F. H. Storer, J. D. Runkle, C. H. Dalton, J. B. Francis, J. C. Hoadley, M. P. Wilder, C. L. Flint, Thomas Rice, John Chase, J. P. Robinson, F. W. Lincoln, Jr., Thomas Aspinwall, J. A. Dupee, E. C. Cabot, their associates and successors, are hereby made a body corporate, by the name of the Massachusetts Institute of Technology, for the purpose of instituting and maintaining a society of arts, a museum of arts, and a school of industrial science, and aiding generally, by suitable means, the advancement, development, and practical application of science in connection with arts, agriculture, manufactures, and commerce, with all the powers and privileges, and subject to all the duties, restrictions and liabilities, set forth in the sixty-eighth chapter of the General Statutes.

SEC. 2. [Relates to holding of estate.]

SEC. 3. [Specifies the lot of land to be reserved.]

SEC. 4. If at any time within one year after the passage of this act, the said Institute of Technology shall furnish satisfactory evidence to the Governor and Council that it is duly organized under the aforesaid charter, and has funds subscribed or otherwise guaranteed, for the prosecution of its objects, to an amount at least of one hundred thousand dollars, it shall be entitled to a perpetual right to hold, occupy, and control, for the purposes hereinbefore mentioned, the westerly portion of said second square to the extent of two third parts thereof, free of rent or charge by the Commonwealth, subject, nevertheless, to the following stipulations, namely: persons from all parts of the Commonwealth shall be alike eligible as members of said Institute, or as pupils for its instruction, and its museum or conservatory of arts, at all reasonable times, and under reasonable regulations, shall be open to the public; and within two years from the time when said land is placed at its disposal for occupation, filled and graded, said Institute shall erect and complete a building suitable to its said purposes, appropriately inclose, adorn, and cultivate the open ground around said building, and shall hereafter keep said grounds and building in a sightly condition.

SEC. 5. [Relates exclusively to the Boston Society of Natural History.]

SEC. 6. [Relates to forfeiture of grounds and buildings in the event of non-compliance with conditions specified above.]

SEC. 7. The above-named societies shall not cover with their buildings more than one third of the area granted to them respectively.

SEC. 8. The Commissioners are hereby instructed to reserve from sale the lots fronting on said square on Boylston, Clarendon, and Newbury Streets, until said societies shall, by inclosure and improvements, put said square in a sightly and attractive condition.

SEC. 9.* Upon the passage of this act, the Governor, with the

* Amendments to original bill.

advice and consent of the Council, shall appoint three disinterested persons, who shall appraise the value of all the lands specified in the third and eighth sections of this act, and make a return of said appraisal to the Governor and Council; and if when the lands mentioned in section eight shall have been sold, the proceeds of such sales shall not be equal to the whole amount of the appraisal above mentioned, then the societies named in this act shall pay the amount of such deficit into the treasury of the Commonwealth, for the school fund, in proportion to the area granted to them respectively.

SEC. 10.* This act shall be null and void unless its provisions shall be accepted within one year, by the Massachusetts Institute of Technology and the Boston Society of Natural History, so far as they apply to those societies respectively.

A House for the Cosmopolitan Club.

There is a movement on foot among the members of the Cosmopolitan Club at the Institute to secure a suitable club house, as the suite of rooms now occupied is altogether too small for the purpose. The aim is to secure a house large enough so that there will be ample room for club accommodations, and also rooms for transient or permanent guests.

Undergraduates to Celebrate the Fiftieth Anniversary

The Electrical Engineering Society is planning for Wednesday, April 12, a joint professional society banquet in which all the members of the professional associations connected with the Institute are invited to assist. Several hundred have already expressed their intention of being present at this feature of Technology's semi-centennial. President Maclaurin will be there and will address the students, who have invited for the chief speaker, Frank J. Sprague of New York, consulting engineer, who has attracted attention recently through his proposition to the Public Service Commission of his city for the construction and financing of a \$75,000,000 subway. In May the society will have its final banquet for the year, and at this Prof. Elihu Thompson will be the speaker.

*Amendments to original bill.

THE PIONEER OF INDUSTRIAL EDUCATION

The direct Influence of the Institute of Technology on a branch of education now receiving much consideration

The REVIEW is indebted to *Advance New England* for advance proof of Mr. Munroe's article which we reproduce by permission:

Although its charter was not granted until April, 1861, the Massachusetts Institute of Technology really was conceived in 1846, when the then trustee of the Lowell Institute, Mr. John Amory Lowell, asked Professor Henry D. Rogers of the University of Pennsylvania, and Prof. William B. Rogers (afterwards president of the Institute) of the University of Virginia, to help him draw up a plan for evening classes, under which it would be feasible "to teach the operative classes of society,—builders, engineers, practical chemists, manufacturers, etc." The terms of the Lowell bequest were such as to forbid the creation of a school under its auspices; but from that early day Prof. William Rogers cherished the unfaltering hope of creating in Boston a school which should not only educate for the engineering profession, but which should "provide courses of evening instruction in the main branches of knowledge, for persons of either sex who are prevented, by occupation or other causes, from devoting themselves to scientific study during the day, but who desire to avail themselves of systematic evening lessons or lectures."

In this hope he was encouraged by many of the far-seeing merchants and manufacturers of the city, and in 1859 was launched a project for a "Conservatory of Art, Science and Historical Relics," to occupy four squares of the then unfilled Back Bay lands, and to provide higher scientific education as well as exact technical training for the people of the Commonwealth. Various exigencies, political, personal and financial, unfortunately reduced the proposed four squares of land to one. Moreover, for some years after its opening in 1865, the Institute was forced to concentrate its efforts upon the instruction, in day classes, of students of college age aiming to be leaders in applied science, rather than

upon the giving of general industrial training to mechanics and artisans.

Nevertheless, the needs of that important body of citizens were not forgotten, and with the aid of funds supplied by the Lowell Institute, Technology maintained for many years free evening courses, given by its instructing staff, in drawing, mathematics and many branches of pure and applied science. These courses finally developed into the Lowell Free School for Industrial Foremen, wherein two-year evening courses in mechanical engineering and in electrical engineering are given by members of the teaching staff of the Institute, in the laboratories and drawing rooms of the school, and with standards of attainment comparable to those within the Institute itself.

Valuable as those evening lectures were and this succeeding School for Foremen is, they form but one of the contributions of the Institute of Technology to the development of industrial education. In at least three other ways has the school been of extraordinary service in his special direction: first, through the establishing of the laboratory method in teaching; second, through the creation of the School of Mechanics Arts; and third, through the work of many of its faculty and alumni, as individuals, in arousing public interest in this type of education upon which the economic future of the United States in large degree depends.

We are so accustomed to the use of the laboratory, even in high schools, in teaching chemistry, physics, etc., that it is difficult to realize that less than fifty years ago, all instruction, even in science, was given wholly from the text-book with perhaps the occasional performing of an experiment, before the class, by the instructor. When the Institute opened its doors to students, in February, 1865, it offered, therefore, the first opportunity in the world for young men, as members of a class, to perform by themselves, in a properly equipped laboratory, experiments in chemistry given in the text-book or suggested by the teacher. Moreover, it almost immediately extended the principle of laboratory instruction to the teaching of physics,—being a pioneer also in that—and, later, to the giving of instruction in mining and metallurgy, in steam engineering, and in the testing of materials, through individual work by the students in laboratories where, as far as possible, the actual conditions of the industry are duplicated.

This pioneer work was indispensable, of course, to the develop-

ment of industrial education; for the very foundation of that type of education in that study and practice shall go hand in hand, that a pupil shall learn how things are made through actually making those things himself. Had the Institute not demonstrated the value of laboratory teaching in the training of the engineer, chemist and biologist, it would have been difficult even to conceive the idea of training those who are to enter the industries, through actual work in what are called shops, but which are really mechanical laboratories.

Not satisfied, however, with this somewhat indirect contribution to the development of industrial education, the Institute of Technology conducted for nearly ten years a direct object-lesson in the value of what lies in the basis of all industrial education,—manual training. Impressed by the exhibit made at the Centennial Exposition, at Philadelphia, by the Russian government, of the work of its manual training schools, Professor Runkle, at that time president of the Institute, established, in connection with it, a school of Mechanic Arts. In that school young men of high school age were given a two-year course in carpentry, turning, forging and bench-work, together with the usual English, mathematics, etc., or the ordinary secondary curriculum. So fully did this, and a similar school started by Professor Woodward at St. Louis shortly afterward, commend themselves to the teachers of the country, that it was not long before every leading city in most of the states had something in the nature of a school of mechanic arts. Out of this widespread recognition of the value of manual training has grown a demand for something still more comprehensive and practical, something that shall bear more directly than manual training can upon the needs of the rapidly developing industries of the United States.

In creating this demand, and in helping to formulate the methods through which that demand can best be met, the officers, teachers, and alumni of the Institute have been conspicuous. The important part taken by President Runkle has already been referred to. President Walker was no less active in calling attention to the inadequacy of the old school methods to modern demands, and his papers and addresses, collected after his death into a volume, "Discussions in Education," were epoch-making in their effect upon the development of industrial education. Moreover, when, in 1906, the National Society for the Promotion of Industrial

Education was formed, President Pritchett, of the Institute, was its first executive; and of the four presidents elected since, two have been graduates of Technology. Many members of the teaching staff of the Institute have been prominent workers for industrial education, and all over the country are to be found Technology men, as engineers, manufacturers or teachers, who are leaders in developing, in their communities, types of industrial education which shall most nearly meet, on the one hand, the demand or industry for well-trained workmen, and, on the other hand, the needs of great numbers of young men and young women for an education that shall really develop them industrially, mentally and morally.

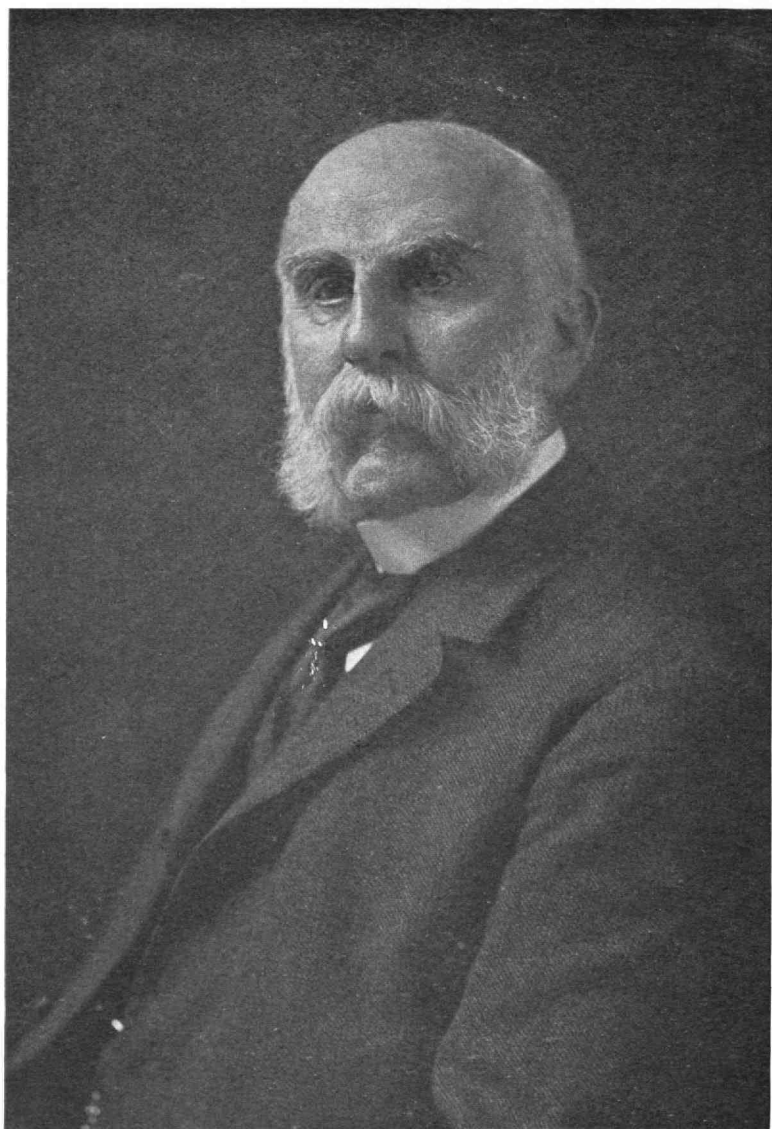
Had the Massachusetts Institute of Technology done nothing in the training of those scientists, engineers, chemists, sanitarians, architects and teachers who, by their efforts have brought money and well-being beyond all power of reckoning to the people of the Commonwealth and of the country as a whole, it would still deserve much of Massachusetts for the part it has played in giving her recognized leadership in the present momentous developments in industrial education.

JAMES PHINNEY MUNROE, '82.

Mr. Munroe reported informally for the Alumni Fund and the Life Membership Fund. These funds are taken over by the Committee on Permanent Funds.

The Status of Associate Members

As was stated in the March REVIEW a special meeting of the Alumni Council was called by request to reconsider the previous action of the council recommending that there be no distinction between graduates and non-graduates in the membership of the Alumni Association. After an interesting discussion of the matter a vote was finally taken in which the previous action of the council was endorsed by a large majority. Ballots are now going out to the membership. The result will be announced in the May REVIEW.



PROFESSOR GEORGE A. OSBORNE

GEORGE A. OSBORNE

The only remaining member of the original faculty—Professor Emeritus after forty-five years of continuous service

The recent retirement of Professor Osborne emphasizes once more the fact that no age limit can be placed upon productive mental activity. Happily the subject of this brief sketch is still too close to us for formal expression in regard to the value of his work to be made. Some words of appreciation, however, may not be out of place.

The length of his service is, in itself, a striking lesson in efficiency,—a lesson such as few lives afford. The transmission of knowledge is not effected without wear upon the human machine. Mind and body must be well adjusted to withstand the strain of continuous output. But the highest reward of teaching,—the privilege of inspiring and directing young minds which are aglow with virility and buoyant with the enthusiasms of early manhood,—accrues in exceptional measure to such a career.

Many may exert a powerful influence upon more than one generation of men. It is a rarer opportunity to be able to impress one's ideals upon picked groups of those to whom by natural selection falls the heavy task of developing the scientific and industrial activities of a nation. But to share in a great adventure of faith, to labor at the foundation of technical education, and to be a part of its noble growth,—this is a unique experience.

Professor Osborne was graduated from the Lawrence Scientific School in 1860. Several years were spent at the Naval Academy in Annapolis as a member of the instructing staff. In 1866 he was called to become a member of that devoted company which the honored founder of Technology gathered about him for his great experiment in education. Since then his life has been merged in the life of the Institute. From 1868 to 1871 he served as secretary to the Faculty. In 1870 came the appointment as Professor of Mathematics, and in 1903 the Walker Professorship was

conferred. The ripe experience of many years of teaching found expression in 1891 in his *Differential and Integral Calculus*,—a text book which won an immediate and lasting success. During 1906 Professor Osborne was absent most of the year owing to ill-health, and on his return in 1907 was relieved of half his former work. In 1910 he was made Professor Emeritus, but at his own desire continued to retain an active though limited share in the regular work of instruction in mathematics.

It was the writer's fortune as a student to attend but one of Professor Osborne's classes. Nevertheless, after more than twenty years, he retains a vivid impression of a broad-minded, sympathetic personality; of a man whose horizon was not bounded by the narrow walls of a class-room. Untiring in his zeal for his subject, this teacher carried the impress of a practical mind—the evidence of contact with the real business of life—which gained for him not alone the hearty respect of his students, but the cordial fellowship of men of affairs.

His clearness of exposition was positively luminous. Alas! that the glow so soon faded when the student took crayon in his turn. His presentation was never interrupted by excursions to the mysterious realm of infinity whither another beloved professor sometimes soared, to the delight and wonder and—shall I say it? to the but partial comprehension of at least some of the class.

Few widely-read teachers have in equal degree the concentration which characterized Professor Osborne's teaching in those happy days; the confining of discussion to the real business at issue; the precise knowledge of how much help a student needed to solve the problem in hand. He knew minds as he knew books, and read them with the same ease and sympathy and just appraisal. It is precisely these qualities of clearness, concentration and helpfulness that shine from the pages of his text.

Suggestiveness, too, characterized his thought. Turning from the steps of Rogers one bright winter day, he casually referred to the low altitude of the sun. In hardly more than a single sentence he suggested the effect of latitude upon human life, the dim light of the London sky in winter, the shaded valleys of northern Europe. Again, it was a word on overheated railway trains—the dessication produced by warming winter air to a temperature of 75° or 80° F.—a veritable Sahara air which modern engineering has not yet rendered decently humid. These incidents may seem

too slight to be worth recording, but to his hearer they revealed something of the man.

Fineness of substance alone can give endurance under long repeated stress. The links of the chain which bind us to the beginnings of Technology are few. They wear brighter if thinner with the passing years. We are grateful that they still hold fast.

FRANK M. GREENLAW, '90.

The M. I. T. in Hawaii

On top of this paper's advocacy of making the Kilauea volcanic region a national park comes the news that the volcano observatory at the brink of the crater is now assured of erection in the immediate future. Besides its being a great attraction of itself, this enterprise of the Massachusetts Institute of Technology will be an interesting adjunct of Kilauea national park.—*Hawaiian Star*.

Meeting of Cotton Manufacturers

The ninetieth annual meeting of the National Cotton Manufacturers has been appointed for April 12 and 13, in order that it may follow the Congress of Technology which will attract many manufacturers to Boston. It will be held at the Massachusetts Institute of Technology. President Maclaurin will speak at the opening session.

New Associate Members

The following former students were elected associate members of the Alumni Association on the date indicated:

February 20, 1911: John Brown, '00; Allen Curtis, '10; William J. G. Dew, '10; Matthew F. Durgin, '09; Herbert S. Gott, '10; Hamilton A. Higbie, '10; Hubert O. Jenkins, '09; John Eben Kreps, '87; Hugh Kelsea Moore, '97; Ernest L. Patch, '10; Ralph T. Regnell, '08; Tom W. Saul, '10; Robert B. Todd, '08.

AGE OF SCHOOLS OF APPLIED SCIENCE

The following is a list of schools of applied science at the present time with the dates of their foundation. Purely agricultural colleges and military schools have been omitted from this list.

<i>Institution.</i>	<i>Founded.</i>	<i>Address.</i>
Rensselaer Polytechnic Institute.	1824	Troy, N. Y.
Massachusetts Institute of Technology.	1861	Boston, Mass.
New Hampshire College of Agriculture and Mechanic Arts.	1863	Durham, N. H.
Worcester Polytechnic Institute.	1865	Worcester, Mass.
Iowa College of Agriculture and Mechanic Arts. ...	1868	Ames, Iowa.
Purdue University.	1869	Lafayette, Ind.
Alcorn Agricultural and Mechanical College.	1871	Alcorn, Miss.
Stevens Institute of Technology.	1871	Hoboken, N. J.
Alabama Polytechnic Institute.	1872	Auburn, Ala.
Virginia Agricultural and Mechanical College and Polytechnic Institute.	1872	Blacksburg, Va.
State School of Mines.	1874	Golden, Col.
Agricultural and Mechanical College of Texas. ...	1876	College Station, Tex.
Mississippi Agricultural and Mechanical College. ...	1880	Agricultural College, Miss.
Case School of Applied Science.	1881	Cleveland, Ohio.
Rose Polytechnic Institute.	1883	Terre Haute, Ind.
Michigan College of Mines.	1885	Houghton, Mich.
State School of Mines.	1885	Rapid City, S. D.
State School of Technology.	1888	Atlanta, Ga.
Montana State School of Mines.	1889	Butte, Mont.
New Mexico College of Agriculture and Mechanic Arts.	1889	Mesilla Park, N. M.
North Carolina College of Agriculture and Mechanic Arts.	1889	West Raleigh, N. C.
New Mexico School of Mines.	1891	Socorro, N. M.
Rhode Island College of Agriculture and Mechanic Arts.	1892	Kingston, R. I.
State College of Washington.	1892	Pullman, Wash.
Montana College of Agriculture and Mechanic Arts.	1893	Bozeman, Mont.
Armour Institute of Technology.	1893	Chicago, Ill.
Clarkson School of Technology.	1896	Potsdam, N. Y.
Oklahoma Agricultural and Mechanical College. ...		Stillwater, Okla.

TECH DINNER IN CANAL ZONE

Visiting Institute Engineers Join Local Alumni and Toast Alma Mater

Tech members of the party of "American Society of Civil Engineers" which recently made an inspection trip to the Canal Zone seized this opportunity to celebrate, on the evening of March 14, with an informal Tropical Tech Reunion.

Preparatory to deliberations on the fate of the Institute, the inner man was served with an excellent dinner at Hotel Tivoli, Ancon, to which the following alumni did ample justice: Charles T. Main, '76, Boston; J. W. Rollins, '78, Boston; William E. Mott, '89, Carnegie Technical Schools, Pittsburg; Morris Knowles, '91, Pittsburg; Frank A. Browne, '06, Culebra, Canal Zone; F. P. McKibben, '94, South Bethlehem, Pa.; Hewitt Crosby, '03, New York City; Charles R. Main, '09, Boston; J. H. Flynn, '05, Gorgona, Canal Zone; William W. Lewis, '89, Hyde Park, Mass.; Frank H. Page, '85, Springfield, Mass.; G. S. Witmer, '09, Corozal, Canal Zone; A. S. Bell, '06, Culebra, Canal Zone; H. W. Ballou, '97, Providence, R. I.; A. L. Davis, '06, Cristobal, Canal Zone; Sidney K. Clapp, '95, Board of Water Supply, Brown Station, N.Y.; H. S. Morse, '03, Louisville, Ky. A rousing M. I. T. cheer which inaugurated proceedings caused the Panamanians to sit up and take notice and as a matter of fact was the real cause for the mobilization of troops on the Mexican frontier.

After the dinner, adjournment was made to the Sun Room of the hotel. Mr. Main gave a "resume" of conditions and progress of Institute affairs, emphasizing the important part which the Alumni Association is taking in these affairs and dwelling particularly on the question of a new site for the Institute. Mr. Rollins sketched the work of the committee of the Alumni Association in securing increased financial assistance for the Institute from the State of Massachusetts and spoke feelingly of the deep and generous interest which the alumni have in the Institute. Mr. Page was called upon to present the details of the proposal emanating

from Springfield for the moving of the Institute to that city. He responded ably, picturing the proposed site for the Institute on the banks of the Connecticut River in glowing terms, noted the advantages of Springfield as a university city and especially called attention to the fact that residents of Springfield appreciate the worth of the Institute sufficiently to assist materially in a financial way—an appreciation which residents in and around Boston keep carefully smothered. While a majority of those present, as a general proposition, favor a Boston site for the Institute, the fact was admitted that sentiment is the principal reason for this preference and it was generally agreed upon that the Springfield offer is worthy of serious consideration. Professor McKibben cited conditions and experiences of several other educational institutions with reference to grounds, buildings and equipment and expressed the hope that the site finally chosen for the Institute will be sufficient not only for the advancement expected within the next fifty years, but adequate for an indefinite period. He stated specifically his opinion that the site should be of an area not less than one hundred acres. This portion of our reunion was intensely interesting, as all realized that the subjects under discussion are vital and that the affairs of the Institute are at a crisis.

Several of the more youthful alumni, including Mr. Page, continued the reunion at the rooms of the University Club in Panama where work on the canal, life in the tropics and less serious subjects were fittingly dealt with. The gathering broke up some time or other with the enthusiastic announcement in the Plaza Cathedral that "We are Happy," *et cetera*.

All visiting Tech men joined in hearty appreciation of the hospitality and courtesy of brother alumni and all officials on the Canal Zone and expressed unqualified approval of the manner in which work is being done on the Canal.

The Harvard Aëronautical Society will hold a glider meet at their aviation field, Atlantic, Mass., May 4, 5, 6. A number of college gliders have been entered, among them that of the Technology Aëro Club.

THE SEASON'S ATHLETIC RECORD

Undergraduates keep up their reputation in Track Work—
Other departments make creditable showing

The undergraduate athletic record during the past season has been a very creditable one, especially in the running events. In the report of the New York Athletic Club meet, February 19, the *Boston Herald* states that the Tech relay team is the best it ever had. The games were held at the Madison Square Garden, February 18, and the relay team brought its season to a very successful close by winning the intercollegiate relay championship. In its account of the event the *Herald* says:

The greatest achievement at the New York A. C. games was accomplished by the Massachusetts Institute of Technology relay team. To triumph over two such clever aggregations as Cornell and Syracuse was hardly expected, but it proved that Frank M. Kanaly has developed the speediest quartet in the history of the institution. R. C. Thompson, P. D. White, T. H. Guething and W. C. Salisbury created much favorable comment by their victory. Cornell led up to the last relay, when Capt. Salisbury uncovered a magnificent burst of speed which carried him to victory over the Ithacans, and many yards in advance of Reidpath, Syracuse's intercollegiate champion quartermiler.

At the annual indoor games at the gymnasium no records were broken, but the competition was keen in all the events. The seniors won the meet, the juniors coming next with seven points less.

The South Boston Athletic Club games were held during the mid-year examinations, but there were enough Tech men entered to carry away four prizes. At the Armory athletic games, Providence, January 25, the Tech one and two-mile relay teams ran against the respective teams of Harvard and made an even break with the University. Harvard won the two-mile race and Tech won the one-mile event. The latter was an extremely close race; the time was 2.45 2-5, and a record for the distance,—four-fifths of a mile. At these games Benson, '12, won the thousand-yard handicap race in the remarkable time of 2.13 2-5.

In the dual meet between the freshmen and sophomores, February 14, the freshmen easily won.

The one-mile relay team again won a victory at the Boston Athletic Association meet of February 11, when they defeated Dartmouth the second time in two years in the fast time of 3.09 1-5 which is the M. I. T. record for the distance.

The Massachusetts Coast Artillery indoor games of February 18, drew most of the men who were not on a relay team or on the freshman track team. Wilson, a freshman, won for Tech in the 75-yard handicap and two other places were taken by Tech men.

In the meet between the freshmen and the Brookline High School, Brookline won by two thirds of a point. Tech would have won the meet if Geuthing, '14, had not been running in New York at the time.

The last competition of the season was at Troy, N. Y. The mile relay team was matched against the crack Cornell aggregation and was clearly outclassed when Cornell set the remarkable pace of 8.13 2-5 for the distance. Neither of the teams came out victorious, but they were matched against the best teams the country can produce, and it was the first attempt to develop two Technology distance teams in order that more men may be encouraged to come out for the sport.

The hockey team has done creditable work during the past season. It has been greatly helped because of the opportunity for practice in the new Boston Arena skating rink even if the hours have been short. The first game was played December 3 in the Arena against the Boston Crescents, who have been the champions of Boston for two years. The game was close and exciting, Tech winning by a score of 7 to 6.

On December 7 the crack Boston Hockey Club whitewashed Tech, the final score being 8 to 0.

The first college game was played with Harvard, December 14, and was fiercely contested. Tech scored first, but the first half closed 3 to 1 in favor of Harvard. Tech made a plucky rally in the second half but was stopped by the great defensive work of the Crimson. Harvard won by a score of 4 to 3.

Although the team was somewhat broken up after the holidays, it put up a fine game against Dartmouth, winning by a score of 3 to 1. This makes four consecutive hockey victories over Dartmouth.

On January 6 and 7 the team played two games at Albany, N. Y., against the Loudon Field Club. The rink was a very small one

and the Tech men did not get used to it in time to prevent defeat. The score was 8 to 5 against Tech. The next evening, however, Tech won over the same club by a score of 5 to 4. On January 26 the team played the Massachusetts Agricultural College on soft ice and won by a score of 4 to 3. Tech is one of the two college teams that has won from the Massachusetts Agricultural College this year.

The trip to Providence on February 11 ended disastrously for Technology. The Providence club won after a strenuous game by a score of 12 to 6.

Williams was completely outclassed by Tech in the Boston Arena on February 16, when she was defeated by a score of 12 to 3.

The last game of the season was played at the Arena, February 24, against the Crescents of Halifax, whose members are men picked from the best teams in that section of Canada. Tech fought hard and lead at the end of the first half by 3 to 0. The men, however, could not keep up this pace in the second half, and the speedy Canadians won the game by 6 to 4.

The team has had three managers during the season, which is in itself something of a handicap. But one college game was lost, that of Harvard at the first of the season, by a close score. The individual work of the team has been of a high order, and the team work has been excellent. It has fairly earned the reputation of being one of the best college teams in the East.

The basket-ball season began with a very good outlook. All but two of last year's team returned to the Institute and a large number of candidates came out for the team. In order to add to the interest a second team was formed with an entirely separate organization. While this latter team has not met with great success, some very good individual players have been developed who ought to make good material for the 'Varsity next year.

The first game was a victory over Boston College after which the team went to New York for the Christmas vacation. Notwithstanding the absence of two men, the Brooklyn Polytechnic team was defeated in a close hard game. The next night the Tech team was defeated by the College of the City of New York, chiefly through inability to score, the guarding being at all times extremely good on both sides. The third game was lost to Dartmouth at Hanover in the last few minutes of play, but this was

followed by a victory over Brown shortly afterward. The team then went West for a series with Syracuse, Rensselaer Polytechnic Institute at Troy, and Union College at Schenectady, but was beaten each time because of poor team work and loose guarding. The games with Syracuse and Rensselaer were very close, but Union College had a better team, and was in superior physical condition.

At the beginning of the second term Tech was defeated by Williams in a game with many curious features, Tech being completely outclassed in the first half and actually outscoring the home team in the second half. Tech then defeated Tufts, and later on Brown turned the tables by winning a victory at Providence. The next game, which was with Wesleyan, resulted in a defeat, but it was the best played game of the season and against an opposing team which is conceded to be the fastest in New England and which was forced to its very top speed. The hard fight put up against Wesleyan left the team in poor condition to meet Dartmouth the next day. The game was a rather poor exhibition of basket-ball and Tech was completely overwhelmed by the men from Hanover. The last game of the season was a victory over Tufts, making a total of five victories and nine defeats.

The results of the season can hardly be termed brilliant. The victories won were almost entirely due to excellent individual playing and it will be useless to hope for consistent results until it is possible to employ a permanent coach and have at least half a dozen games at the home gymnasium.

During the season a swimming team was formed which practised at the Y. M. C. A. tank. This branch of sport was not officially recognized by the athletic association until the latter part of February, too late to arrange for meets this season.

The statement made by an undergraduate in regard to the Tech crew is as follows: "Of the money subscribed last year by the northwestern alumni about \$80 remains. The captain estimates that \$400 will be necessary to operate the navy this season. The management finds the alumni reticent about donations chiefly because no information has been given out as to whether the new site will be near enough to the water to make the crew a permanent part of Institute athletics. It, therefore, seems as though the crew will have to discontinue during this season at least."

GROWING STRENGTH OF LOCAL ASSOCIATIONS

Interest in the Five Technology Clubs on the Pacific Coast thoroughly alive—Northern Ohio Club has enthusiastic dinner—Washington dinner, April 17

TECHNOLOGY CLUB OF BOSTON.—Eight club evenings have been held to date including two "Ladies' Nights." The season opened as it has for the last two years with a talk by the club's unofficial traveler, S. K. Humphrey, '98. This year's journey was to Spain via the Azores. The titles of some of the other talks will give an idea of the diversity of the season's program: Louis K. Rourke, '95, Boston's Commissioner of Public Works, spoke on "Experiences in Spanish America and in the Canal Zone." Rev. W. M. Partridge, '96, talked of "Alaska, the Land of Promise." Mr. Ernest Harold Baynes told in a delightful way of "Our Wild Neighbors." The club was very fortunate in having as one of its speakers Capt. Robert Bartlett of North Pole fame, who talked of his hunting experiences and adventures in the Arctic with Rainy and Whitney. The next talk was by one of our own members, Selskar Gunn, '05, who told in a witty way of the "Trials and Experiences of a Health Officer." On the seventh evening Prof. Charles E. Fay of Tufts showed a large number of mountain pictures, most of which were from the wonderful collection of Vittoria Sella, the photographer who has accompanied the Duke of Abruzzi on most of his expeditions. The following smoke talk was also a mountaineer's account of "Tyrol and the Tyrolese, Mountain Climbing and Chamois Hunting in the Dolomites." The speaker was Dr. William Lord Smith. Our president, W. L. Underwood, '98, has promised us several more good talks before the season closes.

The membership campaign in the fall lengthened our list of residents and under-graduates but there is still plenty of room at 83 Newbury Street and application blanks are readily available.—*Dr. Robert S. Williams, '02, Secretary, 83 Newbury Street, Boston, Mass.*

MASSACHUSETTS INSTITUTE OF TECHNOLOGY WOMEN'S ASSOCIATION.—The Women's Association of the Institute held its eleventh annual meeting and luncheon in the Margaret Cheney Room, Saturday, January 7, 1911, with eighty-nine present. The business meeting was called to order by Miss Matilda A. Fraser at 11.30, and reports from the secretary, treasurer, registration committee, students' aid committee and nominating committee were read and approved: The officers for 1911-12 are as follows: Permanent president, Ellen H. Richards, '73; first vice-president, Margaret E. Dodd, '92; second vice-president, Laura S. Plummer, '03; recording secretary, Elizabeth B. Babcock, '09; corresponding secretary, Mildred E. Blodgett, '07; treasurer, Annie E. Allen, '94; auditor, Miss Edith A. Beckler, '02. Immediately after the business meeting luncheon was served in the private dining room of the Technology Union. This was arranged as a special tribute to our honored president, Dr. Ellen H. Richards, who has devoted so much of her life to technology and science. Each one present received a little booklet in red and gray, containing a late portrait of Mrs. Richards in her doctor's cap and gown, and various extracts from her writings. This was compiled and presented by Miss Frances Stern and Miss Isabel F. Hyams, '88.

After the luncheon some very interesting and inspiring speeches were made, each of which dwelt upon some phase of Mrs. Richards' work. Professor Talbot, '85, spoke as a Technology graduate and her co-worker. He traced her connection with the Institute after her graduation from Vassar, emphasizing particularly her zeal in building up the course in air and water analysis, her own and Professor Richards' great interest in their students and her important work for the state in the analysis of water supplies. A letter was read from Mr. and Mrs. Dewey entitled "Home Economics in the Making." Their tribute may be summed up in the closing sentence,—“When the history of this great Home Economics movement is written, the name which will stand easily first in recognizing the need, organizing the work and shaping the policies will be that of Ellen H. Richards.” Miss Mary Barrows of the Home Economics Publishing House, spoke of Mrs. Richards' many books, Miss Louise Foster responded for Smith College, Miss A. H. Barus represented the Association of Collegiate Alumnæ; Mrs. Kate Ganet Wells; Mr. James P. Munroe,

'82, an alumnus, and President Maclaurin each paid fitting tribute to her extensive and many-sided interests.

No one can realize better than the women students the devotion of Mrs. Richards to high ideals in education and science, and in the application of them to human living. Generous and helpful as each one of the Faculty has always been, it is to Mrs. Richards that they peculiarly owe their opportunity for study at the Institute. Her own scientific achievements and scholarly work have held up a high standard, while her unflinching kindness has aided in personal ways that have met the need of individual students. As a token of their regard for Mrs. Richards and appreciation of her scientific work, she was presented by Miss Susan Minns with \$1,078, from former women students. This sum is to form the nucleus of a permanent fund to be used for chemical research, in any way she may choose. It is earnestly hoped that many friends of Mrs. Richards and the Institute, both men and women, will help to make the Ellen H. Richards' Research Fund of valuable service to science.

In a short speech of thanks to the women of the Institute for their good-will, Mrs. Richards then took the opportunity to describe her experience when receiving the honorary degree of Doctor of Science at Doctor Burton's inauguration as president of Smith College on October 5, 1910.

Among the guests at the luncheon were President and Mrs. Richard C. Maclaurin, Mrs. William Barton Rogers, Mrs. Francis A. Walker, Mrs. James M. Crafts, Prof. Robert H. Richards, Prof. and Mrs. Henry P. Talbot, Mr. and Mrs. James P. Munroe, Prof. and Mrs. A. H. Gill, and Mrs. Kate Ganet Wells.—*Mildred E. Blodgett, '07, Corresponding Secretary, 72 Ashford Street, Allston, Mass.; Elizabeth B. Babcock, Recording Secretary.*

TECHNOLOGY CLUB OF NEW BEDFORD.—An interesting meeting of the Technology Club of New Bedford was held on board the steamer *Gay Head* at its moorings, on the evening of March 9, through the courtesy of Agent Whiton.

The saloon was tastefully decorated with flags and bunting, and twenty-nine members sat down to a clam boil and afterwards listened to an address by T. B. Akin on his trip to Panama.

Everything passed off smoothly except that Stetson introduced a discordant note by appearing in a dress suit, but as he explained that he was going to a dance later it was overlooked.

Charles R. Allen has been appointed supervisor of State industrial schools, and has taken up his headquarters in Boston.—*Charles F. Wing, Jr. '99, Secretary, New Bedford, Mass.*

TECHNOLOGY CLUB OF PUGET SOUND.—One of the most interesting and best attended meetings of the club was held in the banquet room of the Butler Hotel, Saturday evening, March 11. Among the matters discussed was that of interesting the right sort of students attending high and preparatory schools, in the Institute. Arrangements are being made by the officers of the club to make a thorough canvass and provide men of the right spirit and ability with information in regard to the Institute and its work.

The moving pictures of the Technology Reunion were shown, and the members heard the latest news from the Institute. Among those present were Pres. Frank Dabney, Sec. L. Arthur Wallon, Charles H. Alden, Elbridge G. Allen, LeRoy M. Backus, A. H. Bradford, L. T. Bushnell, Charles M. Culp, Charles B. Dodge, E. O. Eastwood, O. P. Emery, A. J. Farnsworth, Henry C. Field, J. W. Fleet, F. G. Frink, Gerald Frink, L. E. Geary, W. A. Gleason, L. R. Grant, K. S. Harbaugh, G. B. Harrington, A. K. Isham, A. C. Lawley, C. M. Lewis, Henry M. Loomis, E. S. Munson, W. S. Matheson, T. P. Moorehead, D. J. Myers, A. T. Nelson, A. G. Place, H. H. Plummer, A. W. Sawyer, E. F. Whitney, S. A. Gardner, Louis Svarz, H. J. Ruggles, H. S. Taft and R. H. Ober.—*L. A. Wallon, '04, Secretary, The Seattle Electric Co., Seattle, Wash.*

THE TECHNOLOGY CLUB OF ROCHESTER.—The Technology Club of Rochester held its first smoker on Friday, February 24, 1911. A new departure was made by assembling in rooms of the University Club which kindly extended the privileges of its house.

The smoker was of a purely social and instructive nature, no business meeting being held.

Mr. R. M. Searle, vice-president of the Rochester Railway & Light Company, was introduced by the president, W. E. Hoyt, '68, and addressed the meeting concerning the "Commercializing of Engineering and the Engineering Professions."

Mr. Searle spoke with but slight reference to his notes, in an entertaining and informal manner, using some figures in a concrete case to illustrate his points.

His talk was much appreciated and seemed to make a deep

impression on some of the older as well as some of the younger members.

The following members were present: Lyman, '90; Haste, '96; Lovejoy, '94; Bent, '05; Cole, '91; Sulzer, '01; Foote '80; Hoyt, '68; Hopeman, '01; Ancona, '03; Rich, '13; Stewart, '09; Turnbull, '10; Packard, '07; Eisenhart, '07; Russ, '07; Allen, '05.

A vote of thanks was unanimously tendered Mr. Searle following which a buffet lunch was served.

Emerson Packard, '07, at the piano, then accompanied the bunch and safely led them nearly through the song book.

The club has three new members, F. D. Rich, J. Turnbull, '10, and M. Hogle, '01. These will tend to offset a similar number of members who have left Rochester.

It is expected to send to the members very soon a booklet containing the constitution and by-laws, together with a complete list of the membership.

Pursuant to a motion passed at the annual meeting, the secretary sent several letters to the high schools and local colleges, offering the services of the club members to any prospective Tech students. It was hoped that such a course would be of great benefit in giving prospective students a clearer conception of the work, requirements of courses, expenses, etc. But one man has made inquiry and that has proved unprolific of any result.—*J. F. Ancona, '03, Secretary-Treasurer, 190 Birr Street, Rochester, N.Y.*

TECHNOLOGY CLUB OF PHILADELPHIA.—The annual meeting of the Technology Club of Philadelphia was held at the Southern Club February 1. The following were elected for the year 1911: President, James Swan, '91; vice-president, Frank H. Keisher, '97; secretary and treasurer, W. H. Blakeman, '05; executive committee, F. A. Hunnewell, '97, E. P. Trask, '99, E. S. Foljambe, '01; H. L. R. Walker, '05; C. F. Willard, '01; Dudley Clapp, '10. A sincere vote of thanks was tendered to Percy E. Tillson the retiring secretary, for his untiring devotion and successful effort to keep things moving for the last three years. His share is large in the credit due those who have brought the Technology Club to the point where we may say we are "going some." A committee with C. M. Emerson chairman, was appointed to arrange for a bowling program, and by the time this is printed the bowling team of the Technology Club of Philadelphia will be in a position

to take on all comers at catchweights. After the business meeting we adjourned to the club rathskeller, where delectable viands were distributed and foaming steins were investigated. When the excitement over the eats had subsided, we were treated to a very interesting talk by Mr. John Overn, Jr., assistant hydraulic engineer of the William Cramp & Sons Ship and Engine Company on the McCalls Ferry Power Plant. Mr. Overn explained the construction of the dam and the construction of the power house, and then showed views of the water turbine generators built at Cramps for this installation. There are ten wheels of 13,500 horse power each and two exciters. We were much interested, also, in hearing of some far larger projected plants in the Northwest. The meeting was voted a great success, and was certainly enjoyed by all.—*W. H. Blakeman, '05, Secretary, 1618 Green St., Philadelphia, Pa.*

TECHNOLOGY CLUB OF CENTRAL PENNSYLVANIA.—The Technology Club of Central Pennsylvania held its fourth annual meeting and dinner at the Harrisburg Club on Saturday evening, the 17th of December, 1910, with the following men present: Farley Gannett, '02; J. R. Brownell, '01; F. A. Robbins, '02; C. A. Emerson, Jr., '05; R. E. Irwin, '09; F. E. Langenheim, '07; T. J. Driscoll, '99; George K. Newbury, '98; F. Herbert Snow; E. L. Chapman, '01; Paul Hooker, '01; R. V. McKay, '06; George P. Vanier, '85; Stephen Badlam, '00.

After the reading of many notices of interest it was voted to send a letter of greeting to the President of the Institute, which was done by the president, Farley Gannett, '02, and F. E. Langenheim, '07. New officers for the ensuing year were then elected: President, J. R. Brownell, '01; secretary-treasurer, Stephen Badlam, '00; representative to the Alumni Council, Stephen Badlam, '00. A vigorous discussion then followed as to the place the engineer should take in the civic life of the community, and it was the sense of the meeting that he should make himself felt in every way possible. The question of the welfare of the Institute was then taken up, and it was voted to start an active propaganda in interesting the young men of the community in Tech as a place for their education. Dr. T. Herbert Snow spoke briefly of the demand for Tech men in state and municipal enterprises, and emphasized the importance of being able to draw on local men for

local enterprises. Doctor Snow further pledged himself financially to assist this work. The proposition was made to have at least one additional meeting at which some representative Tech man should address the members of the club on some subject of general interest. It is hoped to carry this into effect during the coming year. After the meeting, the members adjourned to the dining room of the club to partake of a turkey dinner, and with the coffee, cheese and cigars mingled many a good Tech song, and ended with a rousing cheer for Technology.—*Stephen Badlam, '00, Secretary-Treasurer, 341 Spruce Street, Steelton, Pa.*

WASHINGTON SOCIETY OF THE M. I. T.—The weekly lunches at Wallis' Cafe on Wednesdays, the bowling every Tuesday evening at the Arcade Alleys, and the monthly meetings at the University Club are as popular as ever. The bowling enthusiasts are getting ready for a match with the team from Philadelphia some time in April.

The fifth informal dinner of the season was held on the 13th of February at the University Club, with twenty-two members present. After dinner adjournment was made to the Alumni Room, where B. L. Johnson, '05, gave a talk on "Alaska," illustrated with lantern slides. It is expected that the next informal dinner, on the 20th of March, will be followed by an illustrated smoke talk on "Explorations on Mount Rainier" by Francois E. Matthes, '95, topographic inspector, geological survey. The next formal function of the society will be the annual banquet on the 17th of April, probably at the Arlington Hotel. Dr. A. A. Noyes has promised to be there, to tell us the latest news from Boston, and other speakers of note will be present. It is hoped that all Tech men who can attend will do so, whether they have received individual notices or not.

With a continual increase in the number of active members and with no diminution in the list of associates, the society is having the most prosperous year of its existence.

The officers for the present year are: President, R. B. Sosman, '04; vice-president, F. W. Swanton, '90; secretary, D. G. Haynes, '09; treasurer, F. E. Fowle, '94; member of the executive committee (in addition to the above) Ralph Whitman, '01; representative on the Alumni Council, I. W. Litchfield, '85.—*D. G. Haynes, '09, Secretary, United States Patent Office, Washington D.C.*

TECHNOLOGY CLUB OF NORTHERN OHIO.—Thanks to Frank B. Meade, '89, and R. B. Wallace, '99, who secured the Hermit Club for the occasion, the Northern Ohio Technology Club had the best turnout of its career on Saturday evening, March 11, thirty-three fellows being on hand.

The menu card, from the artistic pen of F. R. Walker, '00, gave a good idea of the nourishment provided—the pot which the artist represented was kept boiling by an informal glee club in charge of Jenkins, '09, Glover, '08, Carlisle, '90, and others of the later generation of Tech men who have come from the Institute since the Tech Union and singing were added to the curriculum.

Our new president, Professor Dates, '94, of the Case School of Applied Science, chaperoned by his associate on that faculty, Professor DuBois, '01, presided. He first called upon the venerable Kreps, '87, our distinguished representative upon the Alumni Board, who gave a monologue illustrative of the sounds produced by different domestic animals. Smythe, '89, of Lorain, and Litchfield, '96 from Akron, spoke for the out-of-town delegation—and, by the way, Akron sent eight of her fourteen Tech men to the dinner, which was certainly a good turn out. Others were called on, and responded more or less informally, and it was the wish of all present that a similar meeting be held two or three times a year.

Merryweather, '96, brought up the proposition of meeting the Detroit Tech men next summer at Put-in-Bay, and taking them on at any kind of contest in which they think they are capable of competing with Cleveland—we expect to get the project under way as soon as the weather is right.

Although our membership lists are a little old, we received responses from nearly 75 per cent. of the 115 Tech men that are known to be in the vicinity of Cleveland—the secretary takes this opportunity of urging any former Institute man, whether a graduate or non-graduate, whose name may not be on our lists, to communicate with him direct, care of the Ball Watch Company, Cleveland.—*Sidney Y. Ball, '03, Secretary, 1847 East 97th Street, Cleveland, Ohio.*

TECHNOLOGY CLUB OF SOUTHERN CALIFORNIA.—The annual meeting of the Technology Club of Southern California was held

at the University Club, Los Angeles, on the evening of December 10, 1910, twenty-five members being present.

At the close of our dinner, the business meeting opened with the reading of a communication from President Maclaurin, who sent his hearty good wishes for the success of our association and its members.

The officers of last year were reëlected to serve for the coming year, the officers being as follows: James W. Johnson, '82, president; Edward L. Mayberry, '06, vice-president; L. A. Parker, '06, secretary-treasurer. At the close of our business meeting Mr. Lyman Farwell, '88 (assemblyman elect), gave us a talk on politics, followed by Mr. F. H. Merrill, '93, on the "Commercial Possibilities of our San Pedro Harbor." Our other speakers of the evening were: Mr. V. L. Benedict, '94, on "Woman's Suffrage"; Mr. John R. Brittain, '93, on "P-A-Y-E. Cars," giving a brief history of their invention and the reasons for their adoption by the Los Angeles Railway Corporation, and Mr. W. K. Gaylord, '93, on "The Progress of Throop Institute, Pasadena."

Among our visitors for the evening were: Mr. E. L. Caldwell, '76, of Boston, who was visiting his classmate, Mr. John F. Williard at the time, and Mr. Leon Smith, '04, who was on his way from the East to his home in San Francisco.

The meeting adjourned with a couple of Tech cheers and a "We are happy."

I am sorry to have to announce the death of two of our members during the past year: Mr. Frank B. Goudey, '97, who was killed at Dove Spring Camp on the Los Angeles Aqueduct; and Mr. Harold A. Prime, '98, who had been employed in the city engineer's office, Los Angeles, until about a year ago, when his health demanded that he make a change and get into work that would keep him out of doors. This change, however, was not made soon enough, and his death came on March 9, 1911, at the home of Capt. J. A. Osgood, '70, Sierra Madre, Cal.—*L. A. Parker, '06, Secretary, 764 Pacific Electric Building, Los Angeles, Cal.*

THE TECHNOLOGY ASSOCIATION OF OREGON.—The association held a very successful meeting Thursday evening, March 16, over twenty-five being present. The moving pictures of the Technology Reunion had been sent on from Seattle where they were exhibited Saturday night, and everyone took the liveliest interest

in the unusual and amusing stunts which were thrown upon the screen. In addition to these pictures a number of stereopticon slides were shown. The Portland Association is thoroughly alive and is among the most loyal on the entire list of Technology clubs. —*Antoine G. Labbé, '07, Secretary, 227½ Washington Street, Portland, Ore.*

"Frenzied French"

The thirteenth annual Tech Show will be given in Boston at the Shubert Theatre on April 20 and 21. The title of the play is "Frenzied French." It is said to be of a high order of merit.

Any person may apply for four seats provided they are for his own use. Tickets for the floor and the first four rows in the balcony, \$2.00. Balcony, next six rows, \$1.50. Balcony, last three rows, \$1.00.

The play will be given at Worcester April 15, and at Malden April 26. Apply to business manager, Tech Show, M. I. T., Boston.

The Technology Bill Advanced

The resolve granting the Institute of Technology \$100,000 each year for ten years was reached in the Senate, March 23, when Senator Lomnasey offered an amendment providing that applicants for scholarships shall make application to the State Board of Education before July 1 in each year, with the approval, in writing, of the senator from the district in which the candidate resides. Otherwise the bill has not been changed. The amendment was adopted and the resolve as amended passed to a third reading on March 29. It was then sent to the house committee on ways and means. The House committee has already had a hearing jointly with the Senate committee, and it is hoped that a favorable report will be returned and the bill acted upon by the House at an early date. It will be a matter of great satisfaction to Tech men if the legislature passes this bill and announcement can be made at or before the convening of the Congress of Technology.

TECH MEN IN THE PUBLIC EYE

CHARLES G. ABBOT, S.B., M. I. T., VIII., 1894, S.M., 1895, has been director of the Astrophysical Observatory of the Smithsonian Institution for some years past, succeeding in this office the founder of the observatory, the late Prof. Samuel P. Langley, whose assistant Mr. Abbot became shortly after receiving the Master's degree.

For a number of years Mr. Abbot has devoted himself to the study of the "solar constant," which denotes the amount of heat received normally at the surface of the earth upon a square centimeter in each minute, or rather that which would be received were there no atmospheric absorption. The determination of the amount of this absorption has been difficult and the results previously ascertained uncertain.

Mr. Abbot has made important improvements in the pyrheliometer, the instrument used in measuring the solar constant, and by prolonged observations made at the Smithsonian stations on Mt. Wilson, Pasadena, at a height of 6,000 feet, and Mt. Whitney, at a height of 14,500 feet, has been able to determine the effect of the absorption of the atmosphere with an unprecedented accuracy. The results of observations made at the two observatories differ by only one per cent., and give as the mean value of the solar constant (1905-1909) 1.925 calories per square centimeter per minute. The values of this "constant" as given by various recent authorities no longer ago than 1905 ranged from 1.75 to 4 calories, the most commonly accepted value being about 3 calories.

Mr. Abbot has also obtained what seems to be conclusive evidence of a long period variation in the "constant," and probable evidence of short period variations, phenomena of great importance as even a small change in the amount of heat received from the sun would be likely to produce marked meteorological changes.

The importance of the work of Mr. Abbot has met with universal scientific recognition. About a year since he was awarded the Draper gold medal by the National Academy of Sciences.

EDWIN H. HEWITT, 1896-97, is the subject of an editorial in the *Outlook*, New York City, under the heading, "A True Builder." The *Outlook* says,—“Fortunately, at the right moment an architect of exceptional ability began the practice of his profession in Minneapolis. For five years he has been associated with the board of directors of the Society of Fine Arts, and has been most influential in forwarding the plan for building a museum. Last year, during his absence in Europe, he was elected president of the society; and if local feeling is consulted and general capability, the working of the plan of the museum will be put in his hands. Mr. Hewitt has already given striking evidence of his possession, not only of technical skill of a high order as an architect, but of that artistic sense which is so often lacking. St. Mark’s church, recently dedicated in Minneapolis, has taken its place as one of the most beautiful Gothic edifices in the country, and, like Calvary Church in Pittsburg, deserves careful study by all those who are planning church buildings. Mr. Hewitt was the architect of this beautiful structure. He has a still greater task on his hands as the architectural adviser of the Regents of the University of Minnesota, who are planning to rebuild that institution entirely and to house it as a university which represents a great state and has command of unprecedentedly large resources.”

FRANK D. CARNEY, '87, formerly assistant general superintendent of the Pennsylvania Steel Company, Steelton, Pa., has just been made general superintendent of the plant. Mr. Carney entered the service of the steel company upon his graduation from the Institute in 1887. He has had practical experience in every department of the company and is particularly well qualified for the position to which he has just been promoted.

ELISHA LEE, '92, has recently been made assistant to the general manager of the Pennsylvania Railroad. Mr. Lee has been connected with railroad engineering ever since he was graduated from the Institute in 1892.

WILLIAM C. FOLSOM, '08, has just been made head of the newly created division of sanitation of Cincinnati, Ohio. Mr. Folsom has been in the service of the Massachusetts State Board of Health and also with the Filtration Department at Washington, D.C. He will have complete charge of everything that pertains to the

cleanliness of the city and will have at his disposal a corps of clerks and a squad of sanitary policemen.

ROGER W. BABSON, '98, publisher of "Babson's Reports" and a well known writer on financial and statistical subjects was born in Gloucester, July 6, 1875. After being graduated from the Institute of Technology in the course of railroad engineering, he devoted himself to reporting on railroad and public service corporations. His first work was with bond houses in the study of properties and the selling of securities. He soon found that it was impossible to represent both the buyer and the seller and he began to represent exclusively the purchasers of securities, a work which has grown into a large business in nine years. From one room with one clerk, the business has grown until it now occupies an entire building with some twenty-five clerks with offices in New York, Philadelphia and Chicago, and agents in London and Paris. Mr. Babson now controls the Moody Manual Company, and is interested in other financial and statistical publications.

CHARLES W. RICKER, '91, who has been employed for the last ten years as an electrical engineer for the Cleveland Construction Company, and Warren Bickford Company, of Cleveland, Ohio, and who has acted as operating manager for a group of railway and lighting companies, has resigned to take a position as assistant general manager and chief engineer of the Havana (Cuba) Electric Railway which operates all the electric railways in Havana. Mr. Ricker has been successively employed by the American Telephone & Telegraph Company, General Electric Company, United Electric Securities Company, and the Lima Electric Railway and Light Company, as electrical engineer. He was also connected with the electric traction department of the New York Central Railroad, and was electrical superintendent of power stations of the Inter-Borough Railroad Transit Company.

BURT R. RICKARDS, '99, who for three years has been chief of the laboratory of the Ohio State Board of Health, has been appointed associate professor of municipal and sanitary dairying in the Agricultural College at the University of Illinois.

HENRY M. HOBART, '89, the well known author and consulting engineer was recently tendered a dinner in London, England, by his professional friends in view of his coming departure from

England to join the general engineering staff of the General Electric Company, at Schenectady. Mr. Hobart joined the British Thompson-Houston Company in 1895. From 1900 to 1903 he was chief designing engineer of direct current machinery with the Union Elektricitäts Gesellschaft. He has been more recently a consulting engineer in London.

HARRISON GRAY DYAR, '89, is custodian of lepidoptera, department of insects, at the National Museum. Dr. Dyar is a frequent contributor to magazines, principally on the larvæ of lepidoptera, leaf feeding hymenoptera, and aquatic diptera. Dr. Dyar has received the honorary degrees of A.M. and Ph.D., from Columbia College.

A. B. McDANIEL, '01, professor of civil engineering at the State University, West Vermilion, South Dakota, was recently elected secretary of the South Dakota Engineering Society.

CHARLES R. ALLEN, '85, formerly head of the department of applied science and director of the evening industrial department, New Bedford High School, and more recently director of the New Bedford Industrial School, has just been appointed supervisor of State industrial schools in Massachusetts with headquarters in Boston.

JOHN MILLS, '09, who has been in charge of the department of physics and electrical engineering at Colorado College, Colorado Springs, Col., resigned his position in March to enter the engineering department of the American Telephone & Telegraph Company. Professor Mills has written a number of text-books which are being used considerably in technical schools.

Fiftieth Anniversary to be a Holiday

In recognition of the celebration of the fiftieth anniversary of the granting of the charter to the Massachusetts Institute of Technology, the faculty has voted to suspend the regular exercises on Monday, April 10, after one o'clock, and on Tuesday, April 11, after eleven o'clock, in order that members of the instructing staff and the students may be able to attend the exercises of the celebration.

DEATH OF NATHANIEL THAYER

Nathaniel Thayer of the Corporation, capitalist, philanthropist and art connoisseur, died suddenly March 21, at his residence in Boston after suffering nearly a year from a general breakdown, aged 59. He was born at Lancaster and was a son of Nathaniel Thayer. He was graduated from Harvard with the degree of A. B. in 1871. In 1887 he became a trustee of the Museum of Fine Arts, which office he retained until his death. He served on the finance committee of the museum, and was a large donor toward its new building fund. For many years Mr. Thayer held a commanding position in Boston's financial and business life. He was president and director of the Hamilton Woolen Company, St. Mary's Mineral Land Company and the Eastern Kentucky Railway Company, vice-president and director of the Chicago Junction Railways and Union Stock Yards Company, director in the United States Steel Corporation, the American Telephone Company, American Bell Telephone Company, New York, New Haven & Hartford Railroad Company, Old Colony Railroad, Old Colony Trust Company, Bay State Trust Company, New England Trust Company, Massachusetts Hospital Life Insurance Company, King Philip Copper Company, Merchants' National Bank, Guarantee Company of North America, Roxbury Central Warf, trustee of the Suffolk Savings Bank, Cushing Real Estate Trust, Municipal Real Estate Trust, Massachusetts General Hospital, McLean Hospital and Convalescent Home in Waverley and a member of the Massachusetts Institute of Technology corporation.

President Richard C. Maclaurin of the Institute of Technology delivered the principal address at the Founder's Day celebration of Clark University, Worcester, on February 1.

We wish to thank many friends for copies of the October number of the TECHNOLOGY REVIEW. We now have a sufficient number for our purpose. The only other issue of recent years which is very low is that of April, 1910.

CLASSES TO MEET FOR DINNER, APRIL 10

Up to the time the REVIEW went to press the following classes have made arrangements for dinner on April 10 as follows: Class of '75 will meet at the Hotel Thorndike at 6 o'clock. Class of '77, Westminster Café, 6 o'clock, dinner *à la carte*. Class of '84, 6 o'clock, City Club. Classes of '85, '86 and '87, 6 o'clock in the English Room, Hotel Thorndike. Class of '98, 6 o'clock, Hotel Thorndike. Class of '92, 6 o'clock in the English Room, Hotel Thorndike. Class of '93, 6.30 o'clock, private dining room, Boston City Club. Class of '94, 6.30 o'clock, Copley Square Hotel. Class of '95, 6 o'clock, City Club. Class of '96, 6 o'clock, Wirth's Restaurant, 35 Essex Street. Class of '98, 6.30 o'clock, Boston City Club. Class of '01, 6 o'clock, American House Rathskellar. Class of '02, 6.15, Boston City Club. Class of '03, 6.30 o'clock, Hotel Brunswick Café. Class of '04, 6.30 o'clock, Copley Square Hotel. Class of '05, 6 o'clock, Bova's Café, 96 Arch Street. Class of '06, 6.30 o'clock, Copley Square Hotel. Class of '07, 6 o'clock, Technology Club. Class of '08, 6 o'clock, Hotel Westminster Café. Class of '09, 6 o'clock, Hotel Plaza, Columbus Avenue. Class of '10, 6 o'clock, Hotel Plaza.

Nearly all the classes are making arrangements to dine together, but up to March 28, definite arrangements had only been made as above. In most cases the classes will dine informally *à la carte*.

Chamber of Commerce and Technology

Recognizing the value of the Institute to the industries of New England, the Boston Chamber of Commerce has arranged to devote the April number of the monthly publication of the Chamber, *Advance New England* to the Institute in its relation to industry. This publication will appear early in April.

A. B. McDaniel, '01, professor of civil engineering, at the State University, West Vermilion, South Dakota, was recently elected secretary of the South Dakota Engineering Society.

TECH MEN ARE OFFICERS

At a meeting of the New England Water Works Association held in Boston in January, Allen Hazen, '88, of New York, was elected president. J. Waldo Smith, '87, of New York, Leonard Metcalf, '92, of Boston, Morris Knowles, '91, of Pittsburg, were made vice-presidents and Richard K. Hale, '04, was elected editor of the publication association.

Your Coöperation is Important

The coming Congress of Technology will be by far the most important event in the recent history of the Institute, commemorating, as it does, the beginnings of the teaching of applied science half a century ago, showing the breadth and importance of the work of the Institute during these fifty years, giving an object lesson in the loyalty and love the alumni bear their Alma Mater and establishing the beginning of a new and more prosperous period in the life of the Institute of Technology. The importance of the meeting is certainly worthy of your attendance.

All the problems connected with the Institute are by no means solved, and the attendance and enthusiasm at the Congress will have a very direct and important influence in giving impetus to the campaign for securing endowment from the community at large, which is to be started at once.

This is the time to impress the public with the tremendous force of Tech spirit and the power of scientific and organized effort.

Note

The library has just received through the courtesy of the Inter-collegiate Association of Amateur Athletics of America, a set of illustrated books describing the last three annual track and field meets of the Association. One feature of the book is the table showing every point winner and his performance, for every year beginning with 1876 to the present time.

CONGRESS OF APPLIED CHEMISTRY

The REVIEW has received a prospectus of the eighth congress of applied chemistry which will be held in Washington, September 4, 1912. As mentioned in the October REVIEW the organization of this congress includes many prominent Tech men. Prof. H. P. Talbot, '85, is vice-president of the section of analytical chemistry; A. D. Little, '85, president of the section of cellulose and starch, and also a member of the executive committee, and William H. Walker, director of the research laboratory of applied chemistry at the Institute, is president of the section of electro-chemistry. The unusual preparations that are being made a year and a half before the congress convenes indicate its unusual importance.

Technology Observatory on Hawaii

It has been definitely decided to establish an observation station in the Hawaiian Islands during the coming summer, and announcement was recently made that Prof. Frank A. Perret, the volcanologist, will be a member of the staff of investigators, and the director of the station. Coöperating with the Institute is the Carnegie Institution, which will send Dr. Shepard to investigate the temperatures of the lava. The United States Weather Bureau will also assist in the work; an officer from the department will go to Hawaii with the Technology delegation. The earthquake station will not be built during the present season, and until building operations can be begun a cottage has been leased near the volcano of Kilauea, to be used as a station and laboratory. This investigation is made possible by a gift of \$25,000 to the department of geology for geophysical research from the estate of Edward and Caroline Rogers Whitney. It is specified in the deed of gift that the work carried out with the income from this endowment shall have a bearing on the protection of human life and property. The citizens of Honolulu have agreed to pay \$5,000 for five years for the support of this observatory, and the further amount needed is being made up by subscriptions from citizens of Boston and Springfield, Mass.

CELEBRATION OF FIFTIETH ANNIVERSARY

The committee in charge of arranging the program for local associations, which consists of Lawrence Allen, '07 chairman, Hollis Godfrey, '98, and Allan W. Rowe, 01, reports that arrangements have now been made with practically every local alumni association to hold a meeting on April 11, when communications will be exchanged between the home association and the various Technology clubs. Although most of the men in Massachusetts, including those in Rhode Island, will attend the Congress, the few that remain will get together and represent the local club.

In order to clear up a misunderstanding that exists to some extent we would say that the price of tickets to the banquet in Symphony Hall, April 11, is \$5.00. Alumni who purchase these tickets, however, are also entitled to a ticket to the smoker. The expense of giving this banquet will be from \$1.00 to \$2.00 more than the charge made for each ticket. The reason is that a large banquet of this kind requires special arrangements in order that the food may be served hot and promptly. In the case of Symphony Hall, gas ranges will be erected in the lobby furthest from Massachusetts Avenue, and connections made for carrying away the burned gas. Steam tables must also be erected and arrangement for serving. In addition to this an extra force of waiters must be engaged because of the distance the food must be carried.

Technology Gets High Praise

At the annual joint dinner of the engineers residing in Boston and vicinity, held January 31, Prof. Elihu Thomson, who was the guest of honor, spoke very handsomely of the Institute, urging the heartiest support for it and speaking in the highest terms of its accomplishments. He is looking forward to the time when the results of the work carried on at such an institution will be used for its full value, resulting in a great saving of industrial waste.

ALUMNI TREASURER'S REPORT

FINANCIAL REPORT FOR 1910

At the annual meeting of the Alumni Association, January 2, the treasurer's report for 1910 was presented as follows:

FINANCIAL REPORT

Receipts

Balance on hand Jan. 1, 1910,	\$381.12
Dues,	2,786.09
Refund—M. I. T. tel.,	1.14
Check returned, '07 dues,	1.72
Life membership,	1,250.00
Interest,	26.25
Annual dinner, 1910,	747.00
Council,	210.00
Spread & Pops,	1,630.17
Reunion,	2,839.59
Gifts,	10.50
Outside:	
Labor,	1,258.79
Materials,	554.66
	<hr/> 1,813.45
Received from outside organizations to be turned over	3.00

REVIEW:

Subscriptions,	2,792.85
Advertising,	1,831.90
Cash sales,	13.07
Special sub.,	23.13
Bound volume,	1.20
Refund,	5.16
Asso. class sec.	779.29
	<hr/> 5,451.60
	\$17,151.63

Expenses

Printing, stationery, postage,	\$1,612.11
Miscellaneous supplies,	257.62
Services,	3,559.47
Refund dues,	2.00
Carfares,	5.80
Multigraph,	13.95
Express,	8.20
Telegrams,	3.89
Telephone,	1.30
Checks returned,	10.05
Messenger service,	.25
	<hr/> \$5,474.64

Alumni Treasurer's Report

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EXPENSES.— <i>Carried forward.</i>		\$5,474.64
Printing nominations,		36.90
Asso. class sec. (1908 Pops),		226.97
Life Membership:		
For 1909,	1,233.00	
For 1910,	975.00	
	<hr/>	2,208.00
Collection charges,		24.33
Annual dinner:		
250 dinners,	687.50	
Cigars, wine at		
guest table, music,		
guests' carriages,		
printing, postage,		
labor,	329.49	
	<hr/>	1,016.99
Refund,		19.00
Council,		235.05
Refund,		1.50
Spread and pops,		1,503.14
Refund,		26.75
Reunion tickets,		70.20
President's alumni fund,		1,000.00
President's western trip,		214.99
Outside:		
Materials,		455.17
Turned over to outside organizations,		4.00
REVIEW:		
Printing,		
For 1909,	1,157.65	
For 1910,	1,129.50	
	<hr/>	2,287.15
Paper,		
For 1909,	188.00	
For 1910,	526.12	
	<hr/>	714.12
Wrappers,	85.50	
Reprints,	43.50	
Stationery,	18.23	
Postage,	383.44	
Engraving, etc.,	150.54	
Services of editor,	458.33	
Miscel. printing,	74.65	
Gifts,	5.00	
Miscel.,	2.76	
Express,	4.70	
Binding,	21.60	
Reporting,	10.00	
Checks returned,	2.00	
Telegrams,	1.37	
Refund on subscription,	.90	
Carfares,	.65	
	<hr/>	1,263.17
Balance, December 31, 1910		319.56
		<hr/>
		\$17,151.63

Bills Receivable

Life Membership,		\$285.00
REVIEW Advertising:		
Previous to October,	\$81.25	
For October,	436.25	
		517.50
State Aid:		
Labor,	113.66	
Postage, etc.,	96.75	
		210.41
Labor and supplies:		
Previous to December,	356.00	
For December,	100.00	
		456.00
		\$1,468.91
On hand December 31, 1910,		319.56
		\$1,788.47
Deficit,		348.87
		\$2,137.34

Bills Payable

Life membership,	\$275.00
Class of '06,	35.00
Salaries,	163.34
REVIEW—Printing,	1,436.00
REVIEW—Paper,	228.00
	\$2,137.34

REPORT OF WALKER MEMORIAL FUND
JANUARY 2, 1911

Receipts

Subscriptions received by treasurer of Alumni Committee,	\$83,178.34
Interest,	1,149.47
Additional subscriptions received by treasurer of Institute,	11,603.34
Interest on fund after investment to January 2, 1911,	35,075.17
	\$131,006.32

Expenses

Bills paid by treasurer of Alumni Committee,	\$2,210.77
Bills paid by treasurer of Institute,	1,332.10
	\$3,542.87
Total bills paid,	600.00
Less appropriation of Association,	
Total bills paid from fund,	2,942.87
Balance in hands of Alumni Committee,	2,667.04
Balance in hands of treasurer of M. I. T.,	125,396.41
	\$131,006.32

Alumni Treasurer's Report

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REPORT OF THE WILLIAM BARTON ROGERS SCHOLARSHIP FUND

Professor Richards reported informally for the Committee on Permanent Funds. He also reported for the William Barton Rogers Scholarship Fund. The work of this latter committee is taken over by the Committee on Permanent Funds.

Dr.

October 1, 1909, to balance on hand,	\$11,249.59
One year's interest to September 30, 1910,	542.23
Refunded by former students,	832.50
	<hr/>
	\$12,624.32

Cr.

September 30, 1910. Scholarship Awards:

C. J. Briggs,	\$125.00
E. S. Clark,	150.00
F. A. Dewey,	100.00
L. N. Downes, Jr.,	100.00
E. R. Hamilton,	75.00
W. B. Hargraves,	125.00
G. S. Humphreys,	125.00
Elmer Jacobs,	100.00
C. W. Kyle,	75.00
G. R. Lord,	125.00
J. D. MacKenzie,	100.00
Dean Peabody, Jr.,	125.00
T. A. Roper,	125.00
L. Rosenstein,	125.00
L. G. Rocoe,	125.00
J. P. Wentworth,	125.00

\$1,825.00

Balance on hand September 30, 1910,

10,799.32

\$12,624.32

Year	No. of Students Aided	Amounts Awarded	Amounts Paid Back
1890-91	2	\$150.00	\$150.00
1891-92	8	325.00	150.00
1892-93	7	450.00	325.00
1893-94	6	400.00	220.00
1894-95	4	450.00	325.00
1895-96	5	450.00	175.00
1896-97	6	400.00	50.00
1897-98	5	500.00	210.00
1898-99	21	1,087.50	425.00
1899-00	5	525.00	462.50
1900-01	7	512.50	287.50
1901-02	7	600.00	300.00
1902-03	6	525.00	275.00
1903-04	5	500.00	200.00
1904-05	5	425.00	200.00
1905-06	9	625.00	100.00
1906-07	8	625.00	150.00
1907-08	9	925.00	275.00
1908-09	17	1,555.00	200.00
1909-10	16	1,825.00	300.00
		<hr/>	<hr/>
		\$12,855.00	\$4,780.00

MISCELLANEOUS CLIPPINGS

The proposition that the Legislature appropriate \$100,000 annually for the next ten years to aid the Massachusetts Institute of Technology in its great work is supported by every consideration of business economy and practical self-interest, to say nothing of the educational and scientific benefits to be derived from such a course; and the latter have always weighed heavily with the state in determining its policies toward such matters. In the field of technical education lies the hope of industrial preëminence for Massachusetts in future. The competition of newer states enjoying natural advantages Massachusetts does not possess, must necessarily be severe. Massachusetts has the advantage of well-established and highly developed industries, it is true, but this is by no means a sufficient guarantee of the continuance of our present prosperity as compared to other commonwealths.

We must look to superiority of industrial methods and the presence of the highest order of skilled labor to maintain the place for Massachusetts that it has already won. We must be in the van in attacking and solving modern industrial problems. It will not do for our manufactures or our technical institutions to drop behind. The example of Germany in advancing itself from a third-rate to a first-rate commercial power within a single generation is often referred to as teaching a profitable lesson, and it certainly is a striking instance of the progress that may be attained by the policy of going after results in an intelligent and systematic way. The use of \$1,000,000 by the state to build up and extend the usefulness of its greatest technical institution will be not a gift but an investment, and one that will pay for itself many-fold. There can be nothing more direct than the relationship of Tech's work to the industrial efficiency of this section. It is like pushing a button and starting the current of electricity that serves as a signal for action, only it is brains, and study and an indispensable scientific equipment that keeps Tech on its high plane of usefulness. If anybody wants proofs of what Tech and Tech men have done for the industries of Massachusetts he can obtain them in abundance.

It is always easy to raise objections, cite unfavorable precedents or point out the absence of favorable ones and conjure up imaginary perils and difficulties to follow the breaking away from the small narrow groove which timid natures ever fear to leave. Shall we listen to the voice that whispers, "It isn't conservative," and "It isn't wise," without giving us any good reason why, or shall we heed the injunction, "It is business," "It is progress," "It is the way of industrial efficiency and civic accomplishment?"—*Springfield Union*.

When Tsok Tse leaves the mining camp of Vulture for China, he will carry a substantial draft for the relief of famine, flood and plague sufferers in his native land. This draft will represent the proceeds of the charity ball given at Vulture last Friday evening.

Arrivals from Vulture state that Vulture hall was crowded to its utmost capacity. There was a large attendance from Wickenburg. In fact everybody in all the

surrounding mining camps who could buy or steal a ride to Vulture was at the ball. Scores walked in and Vulture looked almost as populous as Phoenix during fair week.

As for the ball itself, everyone says that it was one grand success. The society of Northern Maricopa county was out in force. And in that democratic country society is everybody from the superintendent's wife down to the camp washer-woman.

Tsok Kia Tse was present and proved to be a general favorite with the ladies. His curious manners, reminiscent no less of China than of the Massachusetts Institute of Technology, they found very charming and quaint. Tsok was head usher. He was assisted by T. B. Black, Edward Melzer and D. J. Curry.—*Phoenix Republican*.

It would be a serious misfortune for Boston if, by the process of elimination of sites impossible because of excessive cost, the Institute of Technology should be forced to go outside of Boston or its immediate vicinity for its new location. There is no question that Technology desires to remain in Boston, and it probably will do so—either in the city proper or in one of the near suburbs. The matter is entirely a practical one, however. A certain sum can be devoted to the purchase. Obviously, this being the fact, the final selection of a site depends upon some location being found within that figure, and if no such site is found in Boston the Institute would be warranted in going elsewhere. The Springfield offer, in the state Institute's finances, is not fairly to be eliminated yet as a possibility.—*Boston Advertiser*.

In a somewhat curious fashion the Congress of Technology with which Tech will next month celebrate its semi-centennial is a news event. It is a commonplace that the application of science to industry—this being the definition of the word "technology"—has made enormous advances within the half century since Gov. Andrew signed the Tech charter. Of the larger practical uses of science, our whole modern use of electricity, for lighting, power and transportation, is comparatively new, and the newness of it is a fact familiar to every one. There are other instances of scientific development in the industries that are nearly as well known, though they are not so conspicuous as the use of electricity.

But what constitutes the news matter of technology today is not the body of great things already accomplished. What is now being attempted, and what the developing science of today is likely to lead to, are the vital matters of the present technology. These new lines of progress and development will be discussed in many of the papers to be presented at the sessions of the Congress of Technology next month. They are matters of the keenest practical and personal interest to thousands of Massachusetts men, manufacturers, merchants and operatives. The Institute has done well, therefore, in throwing open to the general public the sessions, of the second day of the Congress, at which nearly all the scientific papers will be presented.

In the industries the search is increasingly intense for economies in power, in machinery, in the use of labor, and perhaps more than all else in the two items of raw materials and administration or "management." The conditions of modern industry place a high premium on efficiency in every process, and in a curiously back-handed way we are led by the requirements of earning a profit into the most

rigid "conservation" of all our resources. The working out of new lines of conservation is the dominating idea in the applied science of the present day; and reports of these new endeavors, such as the Congress of Technology will offer to the public, are perhaps the most vital "News" matter that can be brought before an industrial community.—*Boston Herald*.

In a few days the Massachusetts Institute of Technology will celebrate the fiftieth anniversary of its establishment.

This great institution, which lays stress on the "advancement, development and practical application of science in connection with arts, agriculture, manufacture and commerce," was a pioneer in the modern movement toward technical education.

Latin and Greek and philosophy of a purely speculative nature have given way before the terrible onslaught of practical education and the trail blazed by the Boston school has been followed in a degree by institutions the length and breadth of the land.

The celebration of the semi-centennial will be in the nature of a Congress of Technology, at which a general discussion will be had of what the application of technical science to the world's business has accomplished. Papers will be read on architecture, business administration, economics, power production and administration, factory sanitation, industrial organization and training, public health, materials and manufacturing processes, reclamation of arid lands and many other subjects of vital public interest.

A glance at the list of speakers, practically all of whom are graduates of the Massachusetts Institute of Technology, shows the great field of activity opened up by this pioneer school in the scientific world. Frederick H. Newell, '85, director of the United States Reclamation Service, will be one of the men on the program. He stands at the head of hydraulic engineers in America, and is typical of the new activities opened by training men in the sciences rather than in the languages and humanities almost exclusively.

The great dam which Mr. Roosevelt dedicated in Arizona last Saturday stands as a monument to Mr. Newell. Under his supervision and with the encouragement of such men as Mr. Roosevelt and Mr. Pinchot, the government undertook this project, which will put water on 200,000 acres of land which was formerly arid.

Samuel M. Felton, '73, who has been prominently identified with the Tennessee Central and is now president of the Chicago Great Western Railroad, will also be a speaker on the Boston program. Famous architects, professors of metallurgy and mining presidents of great chemical and electrical companies and other heads of great industrial concerns will contribute to the program.

What a revelation it would be to college graduates of a century ago to hear such a program. The scholar of today is no longer an expert in Hebrew. He may not know much about Greek poetry, but may have the more important knowledge of how to construct a sanitary sewer system, or provide adequate water supplies for great cities.

This is the age when men do things. It is the age when the student does not necessarily shut himself up within his own library and ponder over the lore of the ancients. Educated men of today are awake to their responsibilities in connection with the proper administration of public affairs. They tackle live problems without hesitation and make themselves felt in the general uplift movement.

The old-fashioned school educated ministers, lawyers, doctors and teachers. The modern university still trains men for those four honored professions, but the great percentage of its graduates go into various commercial pursuits. It is an era of business and great business development, and the distinguished list of alumni from Massachusetts Institute of Technology shows how well the founders of that school appreciated the necessity for a different sort of education to meet changing conditions in the United States.—*Nashville Tennessean*.

The coming Congress of Technology, in Boston, will be an interesting anniversary celebration. It will mark the fiftieth anniversary of the chartering of the Massachusetts Institute of Technology. Incidentally and inevitably it will bring to mind, and call attention to, the vast increase in the demands of technical education since that institute was founded.

Think how technical problems have grown in the last fifty years! Mining and the treatment of ores, railroad construction, other forms of transportation, the production and distribution of power, the various applications of chemical knowledge, are but a few of the things which have witnessed a marvelous development. This anniversary of Massachusetts Tech calls attention to the achievements of half a century and to what amounts to a wonderful transformation of human society.

The number of technical schools in this country, and the introduction of technical training in the common and secondary schools, show how thoroughly the present generation recognizes the need of better and more general technical instruction than was given fifty years ago—better than is even yet given.—*Buffalo Express*.

BOOK REVIEWS

SEWAGE DISPOSAL, by Leonard P. Kinnicutt, '75, C.-E. A. Winslow, '98, and R. Winthrop Pratt, '98, 1910.

The statement made in the preface of this book may serve to indicate its mode of attack. " . . . it seemed to us that there remained room for a general survey of the (sewage) problem from the various viewpoints of the chemist, the sanitary biologist and the engineer, and with particular reference to the conditions of American practice."

This composite point of view has resulted in the production of a most interesting and valuable treatment of the whole sewage problem. If any one point of view may be said to predominate over the others, it is that more theoretical aspect of the problem, which involves knowledge of the underlying chemical and biological principles. In its engineering aspects the book is perhaps less complete than other works upon the same subject; probably purposely so in view of the large number of works upon the general subject of sanitary engineering and many special engineering treatises upon the more restricted subject of sewage disposal. Each chapter is rich in historical references, and each is particularly fortunate in containing the very latest work upon the subject under discussion. The special reference to American practice makes the work of exceptional interest to American engineers, although one cannot but note the very obvious preponderance of European work.

The authors devote an introductory chapter to the question of the sanitary demand for sewerage and sewage disposal, and a chapter to the chemical composition of sewage, after which there follow chapters upon disposal by dilution, upon the various mechanical preliminary treatments, upon the septic tank processes, with a special chapter upon sludge, and then one or more chapters upon each of the main biological processes, irrigation, intermittent sand filtration, contact beds and trickling beds. The book concludes with a chapter on disinfection of sewage and sewage effluents and a final chapter describing the general features and methods of sewage analysis.

It is well illustrated throughout, especial care having been taken to select illustrations of distinct merit, and each having a definite reference to the matter immediately under discussion. Material has been freely borrowed from various authorities, and the book is especially rich in material transmitted first hand from various private sources of information.

The bibliography is exceedingly full, although it is expressly stated that no attempt at a complete bibliography is made. The eleven pages of references are to those authorities cited in the text, which serves better than anything else to illustrate the thoroughness with which previous literature has been digested.

One may say with no fear of contradiction that by reason of its breadth of treatment, its wealth of citations and its inclusion of most recent work, it will for many years rank high among similar productions from whatever source.—*Earle B. Phelps, '99.*

ELEMENTS OF MACHINE WORKS, XI+192 P.P.; price \$2.00, and PRINCIPLES OF MACHINE WORK, XIV+388 P.P.; price \$3.00; by Robert H. Smith, Instructor in Machine Tool Work, M. I. T., Industrial Ed. Book Co., Boston, Mass., 1911.

These two eminently practical treatises upon the operation of hand and machine tools, constitute a substantial advance in the literature of the machine shop. Beginning in each case with a comprehensive explanation of the machine or tool under consideration, the author leads the student in a natural and logical manner to an understanding of its broadest and most complex uses.

The volumes are both replete with well-adapted illustrations. Whenever possible the actual relation of the operator's hands to the tool in use is clearly portrayed. This unique and original feature serves to impart by a glance to the eye, the substance of many a long and wearisome explanation, with the result that a vast amount of information is accurately and quickly gained.

In each machine process a definite and rational method of procedure is laid down in the form of a tabulated "Schedule of Operations," with the successive steps numbered in logical order. This feature is believed to be original with the author. The student is thus taught to avoid a series of aimless attempts at a certain line of work, and is encouraged rather to grasp the fundamental principles which underlie the industrial process. Not alone are these books useful to the student of mechanic arts but the trained machinist as well will find in them a vast amount of exact information.

To supplement the ordinary demands of the machine shop considerable space is devoted to well-arranged tables of data and standards. The ordinary problems in shop installation which the machinist is often called upon to solve are illustrated and explained.

This series of books, of which the third volume on "Advanced Machine Work" is in preparation, well illustrates the systematic teaching of the educational principle which underlies industrial education. They are the outcome of many years of faithful study and practice upon the part of the author. It is believed that they will be found equally useful in the school and in the shop.—*George B. Haven*, '94.

TEXT-BOOK ON PRACTICAL ASTRONOMY.—By George L. Hosmer, Assistant Professor of Civil Engineering, Massachusetts Institute of Technology. First edition. New York: John Wiley & Sons. London, England: Chapman & Hall, Ltd. Cloth; 6 x 9 $\frac{1}{4}$ ins.; pp. 205; 78 text illustrations and 7 tables. \$2, net; English price, 8s. 6d., net.

The teaching of astronomy to students of civil engineering is somewhat difficult. The time available for this subject in many institutions does not permit of a more extensive treatment than is given in the text-books on plane surveying; and this is not always sufficient to produce a thorough understanding even of all the simpler operations.

Mr. Hosmer's book treats of practical astronomy for engineering students with about the amount of detail and degree of thoroughness with which it should be taken up, if observations and reductions are to be understandingly, not mechanically, performed. The book is especially adapted for students who have studied surveying and know how to use surveying instruments and who have not time to

take an advanced course in astronomy, and is written from the point of view of the engineering student who desires results.

The scope of the book and the method of treatment are on middle ground between the surveying text-book, which usually needs considerable supplementing, and the text-book on geodesy, which is too intricate for many students. In addition to its usefulness as a text-book for a separate course in astronomy, it will serve well as a reference book to supply the supplementary information which is usually needed in book form whenever astronomy is taught in connection with surveying.

The book deals chiefly with such observations as can be made with surveying instruments, but also treats briefly observations of a higher degree of precision. Unnecessary refinement is avoided; but in order to prevent misuse of short cuts, emphasis is placed upon an understanding of principles and a proper conception of the relative value of the different elements of the problems.

The matter is concisely and definitely handled; explanation is supplemented by many excellent diagrams and charts; such tables as are needed, or are useful for more than a short time, are given.

The book contains 14 chapters, a set of tables and an appendix. The subject matter is as follows: I. The celestial sphere; the real and apparent motions of the earth, the sun and the other planets. II. Points and circles of reference. III. and IV. Systems of coördinates on the celestial sphere; relation between coördinates and their relation to the observer. V. The several kinds of time, their relation to each other, to longitude; the measurement of time. VI. Explanation of the use of the American ephemeris and nautical almanac, and star catalogs. VIII. The figure of the earth; correction for parallax, for refraction, for semi-diameters of sun or moon, for dip. VIII. Attachments to the engineer's transit for astronomical observations; the sextant, the zenith telescope; observations. IX. The constellations, planets, and stars considered in practical astronomy. X. Observations for latitude on a circumpolar star; on the sun; on a southern star. XI. Observations to determine the time. XII. Observations for longitude. XIII. Observations for azimuth. XIV. Nautical astronomy; latitude, longitude and azimuth at sea; the position of a ship. Tables and short appendix on tides and tidal observations.—*Engineering News*.

We have just learned as the REVIEW goes to press of the sudden death of Mrs. Ellen H. Richards, wife of Professor Robert H. Richards, and instructor in sanitary chemistry at the Institute. Mrs. Richards was stricken with angina pectoris at her home in Jamaica Plain, March 23. She rallied to some extent and it was believed that she would recover. On March 30, however, there came a turn for the worse and she passed away soon after nine o'clock in the evening. Shortly after she was stricken, she called for pen and paper and insisted on putting the final touches on a paper which she was to have read at the Congress of Technology. An account of Mrs. Richards' great service to the Institute, state and nation will appear in the May REVIEW.

CONGRESS OF TECHNOLOGY

Marking the 50th Anniversary of the Granting of the Charter
to the Massachusetts Institute of Technology

PROGRAM

MONDAY, APRIL 10:

- 2.30 Address by the President of the Institute and opening session of the Congress in Huntington Hall. Open to the public.
- 6.00 Most of the graduate classes will dine together.
- 8.00 Anniversary smoker at Symphony Hall. The Waltham Watch Company Band of thirty pieces will be in attendance. A number of new and special entertainment features will be introduced, and refreshments will be served. Dress informal. Accommodations for 1100 on the floor. Tickets, \$1 each; balcony seats for undergraduates and friends of alumni, 50 cents each. Five dollars (\$5) entitles former students and undergraduate seniors to tickets for smoker and banquet.

TUESDAY, APRIL 11:

- 11.00 to 1.00 and 2.30 to 4.30.
Sessions of the Congress in the Institute buildings. Open to the public. Papers will be classified into five general sections. Definite assignment of sections and program of papers will be announced later.
- 7.00 **SHARP.**
Subscription banquet in Symphony Hall, to be addressed by men of National reputation who have been identified with the progress of science and industry. Arrangements of an unusual character are being made for this banquet. Covers will be laid for a thousand guests. Subscription ticket, \$5. Purchasers of banquet tickets are entitled to as many balcony tickets as may be desired. Balcony seats for undergraduates and friends of alumni, 50 cents each.

Applications must reach Walter Humphreys, Massachusetts Institute of Technology, Boston, by April 8th. Tickets will be mailed unless otherwise ordered.

NEWS FROM THE CLASSES

1868.

PROF. ROBERT H. RICHARDS, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

W. P. G. Hayward is located at 1210 Bannock Building, Denver, Col. Mr. Hayward, who is a member of the class of '70, is a banker in Denver and used to sing with the secretary in the Glee Club in 1866. Hayward and Sam Cabot were always great friends.—The Washington Society of Engineers had a reception and dinner, February 20, in honor of Brig.-Gen. William H. Bixby, Chief of Engineers, U. S. A., and of former chiefs of engineers residing in Washington. Senator Theodore E. Burton delivered the address of the evening, reviewing briefly the accomplishments of the Corps of Engineers since its organization.—Eben Stevens says that he has been trying to take things easily but with his ordinary vocation of earning bread for the family and establishing a municipal water plant in his town, where he is chairman of the commission, and with his spare time aiding the committee on State Aid to obtain their grant of \$100,000 a year for ten years from the State, he is not eating the "bread of idleness" this winter. During the winter months he is living at the Hotel Bellevue, in Boston.—While attending a dinner given in New York City to the contributors to the Encyclopedia Britannica, in January, Prof. Robert H. Richards was kidnapped by some members of the Technology Club of New York which was holding a dinner at the Knickerbocker Hotel, and taken to the banquet where he made a speech. He went to Lebanon, Pa., professionally, to see an interesting concentrating plant where the process consists of first taking out the iron with a magnet and then concentrating the copper with the usual concentrating tables. The iron which is of a low grade as it comes from the mine, becomes high grade upon the removal of the copper, while the copper is a salable concentrate of commercial value. Subsequently he visited the Sheffield Scientific School of Yale, where he met Professor Bugbee and they were delightfully entertained by Professor Huntoon and were shown the John Hayes Hammond Laboratory. While in New Haven a long distance telephone message called Professor Richards to Joplin, Mo., to inspect one of his new machines which had just been installed. He found the machine doing excellent work and returned home in time to begin work at the first of the term with his boys.—A letter from Bryant P. Tilden, dated Jamestown, N.D., March 11, brings the

very unwelcome news that he suffered a stroke of paralysis last year which has confined him to the house ever since. He says, however, that he does not appear to get any worse and probably no better.—Charles B. Fillebrown writes that he cannot think of anything for publication in *THE REVIEW* except “Fillebrown abates no jot or tittle of interest in his taxation specialty.” On the 9th inst. by invitation of Professor Carver, who was called away, he “substituted” for the professor in his political economy class at Harvard and at Radcliffe.”—Myles Standish writes that not being actively engaged in business, he had little news of general interest. His time is passed in looking after his private concerns and in the ordinary activities of modern life with some foreign travel.—Whitney Conant writes that he has not felt better for many years and is living a most happy and quiet life.—James P. Tolman has just returned from a visit to his son, Dr. Richard C. Tolman, '03, who is temporarily occupying the position as instructor in physical chemistry, at Ann Arbor.

1869.

H. A. CARSON, *Sec.*, 79 Glenwood Street, Malden, Mass.

John Rayner Edmands, son of General Benjamin F. and Catharine Edmands, was born in Boston, February 18, 1850. He entered the newly-established Massachusetts Institute of Technology in the fall of 1865, for which he was prepared at the Boston English High School. When the time for a choice of courses was reached, he decided to take the Course in Mechanical Engineering from which he was graduated in 1869. He was thus the youngest man who has ever been graduated from the Institute. The writer well remembers his boyish appearance as a junior officer of the Institute battalion about 1867, and the sober dignity of his deportment in that position. He was an excellent student and much interested in various studies other than the purely professional ones of his course, especially in certain branches of physics, among which the subject of the compensation pendulum may be particularly mentioned.

Soon after graduation he entered upon the practice of his profession. During the summer of 1870 he was draughtsman for the Moseley Iron Building Works, and throughout the autumn and early winter of the same year acted as a surveyor on the Massachusetts Central Railroad. From March, 1871, to July, 1873, he was employed as a mechanical engineer in the engineer's department of the Providence Water Works. While here he took a responsible part in the design of the Cornish pumping engine, which was constructed for that city under the direction of Lebeus Ward. His health, however, was not good, so that he was obliged to withdraw from active work until the end of 1874, when

he opened an office on Franklin Street in this city. At this time he also pursued advanced studies at the Institute as a graduate student.

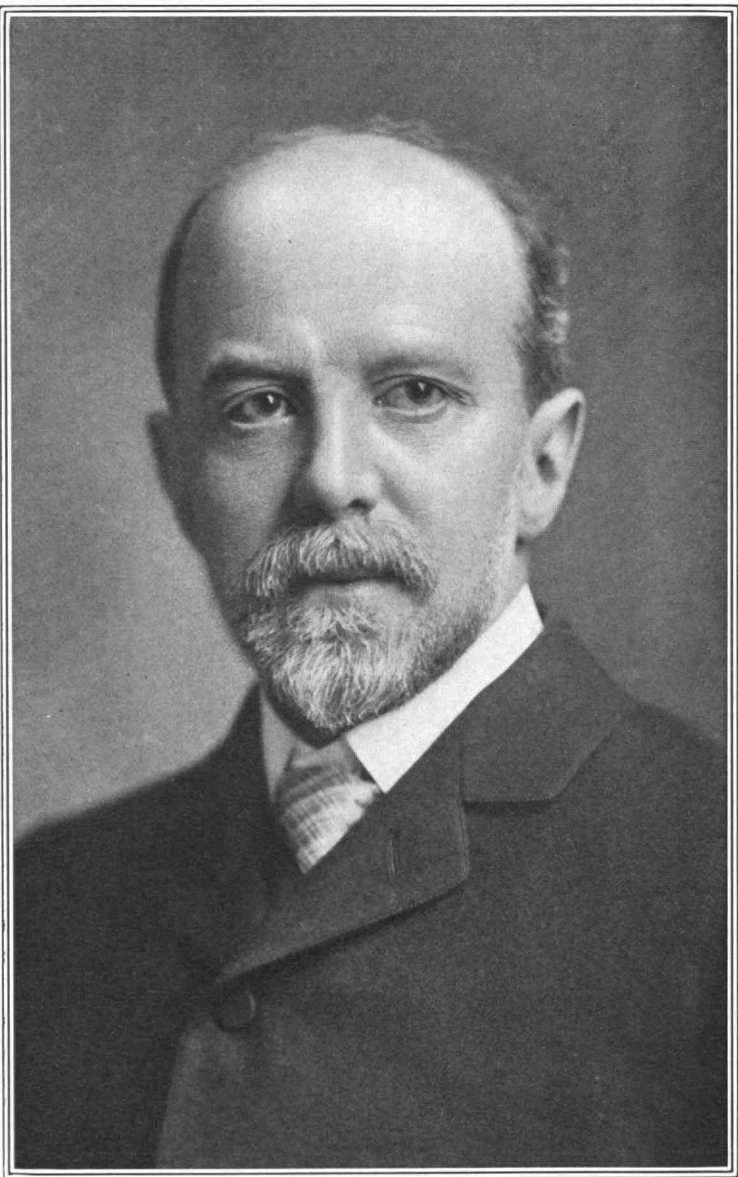
He had long been interested in the measurement and distribution of time, and in 1881, on his appointment to a position in the Harvard College Observatory in charge of the time service, he entered upon a wholly congenial occupation. This particular work came to an end in 1892 at which date the public distribution of time by the Observatory was discontinued in consequence of the more extended development of this work by the United States Naval Observatory, but he remained a member of the staff of the Harvard Observatory as librarian during the rest of his life.

On October 21, 1885, Mr. Edmands married Miss Helen L. Atkins of Boston. Their married life, however, was of brief duration. Mrs. Edmands died January 6, 1888, leaving an infant daughter, who survived her mother only a few weeks.

During the winter of 1909-10 the state of his health had been such that he sought relief in a southern trip. While returning, however, he became so ill that he was obliged to break his journey and go for treatment to the Johns Hopkins Hospital in Baltimore. His disease was beyond remedy, and he died in the hospital, March 26, 1910.

As an alumnus of this Institute, Mr. Edmands maintained an unbroken interest in its welfare throughout his life. He was active in the early work of the Alumni Association and always ready to render whatever services were possible. When the Course in Electrical Engineering was opened he lent his aid, and for several years gave one or more lectures annually upon the electrical distribution of time and kindred subjects. The continuance of his love for the Institute and his belief in the importance of its work were finally manifested by the bequest to it of a considerable portion of his estate. In this he carried out an intention of many years standing.

Mr. Edmands was a passionate lover of the mountains and greatly interested in mountain exploration. He was one of the most earnest and active promoters of the Appalachian Mountain Club from its inception in 1876, and in 1886 was chosen to be its president. He continued to be an active member of one of its most important committees up to the time of his death. He devoted much time and strength throughout many years to the opening and maintenance of mountain paths and camps upon the northern peaks of the great range of the White Mountains and spent largely of his substance to bring them up to the high level of his ideals. The sad devastation wrought by the axe of the woodman was to him a source of deep grief and resentment. On several occasions he instituted efforts toward concerted action to save the New Hampshire forests, but these did not meet with sufficient response at the time to become effective.



LEONARD PARKER KINNICUTT

Throughout his life he was a lover of the best music, which was an unfailing solace to him. He seemed especially to enjoy the works of the great masters of choral music and of Bach in particular. He was, moreover, a skillful musician, and for forty-two years, from 1868 until his death, he took charge of the music of the Howard Sunday School of the Bulfinch Place Chapel, an institution in which he was deeply interested.

His was a nature of exceeding sensitiveness and great uprightness. Anything which lacked in beauty or in truth jarred sadly upon his being. He was a sincere friend, and beneath a reserve at times quite impenetrable he concealed a willingness to open his feelings deeply to those whom he trusted. If because of the same sensitiveness he sometimes found it difficult to work with other men, this arose from over-earnestness with an occasional failure to perceive that there are many ways of looking at practical problems, and many possible and proper solutions of them rather than from mere insistence upon his own desires. He possessed likewise a great bravery of spirit with which he strove against the severe afflictions that came to him. These he bore with fortitude and without bitterness.

Those who knew him best will remember him with the most regard; but no one who ever had dealings with him can fail to recall with admiration his sterling integrity, strong earnestness and untiring devotion to the works which he set himself to accomplish.

C. R. C., '70.

1875.

E. A. W. HAMMATT, Sec., Hyde Park, Mass.

The annual meeting of the class was held at Young's Hotel, March 3, 1911, at 6.30 P.M.—After the usual social hour, the following sat down to dinner: Aspinwall, Beal, Bowers, Dorr, Hammatt, Hibbard, Lincoln, Mixter, Plimpton, Stoddard, Willard. Meeting called to order by President Hibbard at 8.50 P.M. Records read and approved, and reports of secretary and treasurer accepted. The old board of officers was reëlected. Beal reported that flowers were sent in the name of the class to Kinnicutt's funeral.—Adjourned at 10 P.M.

The following sketch of the life of Leonard Parker Kinnicutt is from *The Journal* of the Worcester Polytechnic Institute. The cut of Mr. Kinnicutt is also produced through the courtesy of that publication:

"At dawn of the sixth of February, death came peacefully to Leonard Parker Kinnicutt, senior professor at the Institute, and for nearly thirty years one of its most loyal and efficient members.

"Returning from a delightful summer of European travel, he had begun the work of the year, apparently in as good health as

usual. But the semester had hardly opened when he was confined to the house by what seemed a slow fever. Nearly two months passed before the real cause of his illness could be diagnosed as tuberculosis. At once all the resources of medical science were enlisted to combat the disease, but they proved of little avail. Toward the end of January his heart began to be seriously affected, and he sank rapidly. The end was probably hastened by the sudden death of his sister, which occurred a week before his own.

"Dr. Kinnicutt was born in Worcester, May 22, 1854, the son of Francis H. and Elizabeth Waldo (Parker) Kinnicutt. Following his graduation from the Massachusetts Institute of Technology in 1875 with the degree of bachelor of science, he spent four years in the study of chemistry at the universities of Heidelberg and Bonn. At the former he came under the inspiring influence of Bunsen, and at the latter he was charmed by the fascination of organic chemistry under the famous master, Kekule. During these years he made many lifelong friends, among them Hempel of Dresden, Anschütz of Bonn and Treadwell of Zurich, with whom he was in active correspondence to the last. Returning to the United States in 1879, he spent a year in graduate study at the Johns Hopkins University, and then three years at Harvard, where he served as instructor in quantitative analysis. In 1882 he received from Harvard the degree of doctor of science, and in September of the same year came to the Institute as instructor in chemistry. In the following January he became assistant professor of chemistry; three years later he was made full professor, and since 1892 has been director of the chemical department.

"Dr. Kinnicutt was an indefatigable worker in varied lines of chemical research, as will be seen from a list of his scientific papers:

1. With R. ANSCHÜTZ—Vorläufige Notiz über einen Versuch zur Darstellung der Phenylglycerinsäure. (B. 1878, 1219.)
2. With R. ANSCHÜTZ—Addition von Bromwasserstoff mittelst einer Lösung von Bromwasserstoff in Eisessig. (B. 1878, 1221.)
3. With R. ANSCHÜTZ—Über Phenylglycerinsäure. (B. 1879, 537.)
4. An Indirect Determination of Chlorine and Bromine by Electrolysis. (*American Chemical Journal*, 1882, p. 22.)
5. The Decomposition of Phenyl-tribrom-propionic Acid by Water. (*American Chemical Journal*, 1882, p. 25.)
6. A Modification of Noak's Method for Preparing Carbonic Oxide. (*American Chemical Journal*, 1883, p. 43.)
7. With GEORGE M. PALMER.—B. Phenyl-tribrom-propionic Acid. (*American Chemical Journal*, V, 1883, p. 383.)
8. With J. W. NEF.—Volumetric Determination of Combined Nitrous Acid with Potassiumpermanganate. (*American Chemical Journal*, 1883, p. 338.)

9. Analysis of Meteoric Iron from Little Miami Valley. (*Sill. American Journal*, 1884, p. 497.)
10. With R. C. SWEETSER—Remarks on Schulze's Process for the Quantitative Determination of the Halogens in Aromatic Compounds. (*American Chemical Journal*, 1884, p. 41.)
11. With G. D. MOORE—The Action of an Alcoholic Solution of Silver Nitrate on the Ethyl Ether of Phenyl-dibrom-propionic Acid. (*American Chemical Journal*, 1891, p. 204.)
12. With G. R. SANFORD—The Iodometric Determination of Small Quantities of Carbon Monoxide. (*Journal American Chemical Society*, 1900, p. 14.)

"Since 1900 he has carried on many investigations, particularly in sanitary work and in the capacity of consulting expert. Many results of such work have been published as reports. He also delivered a number of comprehensive lectures which were subsequently published in pamphlet form; these related particularly to water supply and sewage disposal. In this field he became a recognized authority. His advice on matters of sanitation was in frequent demand, even from distant states, and he was often called upon to testify in important court cases, perhaps the most notable being in relation to the Chicago drainage canal. Since 1903 he has been consulting engineer for the Connecticut Sewage Commission. He was a frequent contributor to scientific periodicals, and to the proceedings of learned societies upon topics relating to his specialty. In 1910, in collaboration with Prof. C.-E. A. Winslow of the Massachusetts Institute of Technology and Mr. R. Winthrop Pratt of the Ohio State Board of Health, he published a book entitled "Sewage Disposal," which has received high commendation, and has been widely adopted as a university text-book.

"Recognition of Professor Kinnicutt's work in sanitation came from distinguished sources in England and on the continent. One of his highest honors was his appointment as president of the Section of Hygiene of the International Congress of Applied Chemistry, which is to be held in Washington and New York in September, 1912. With characteristic courage and persistence he continued work upon plans for this great gathering of scientists until within ten days of his death.

"At the Institute, his enthusiasm for his specialty was shown, not only by his work in his own department, but by his taking the initiative in the establishing of a new and very promising course for the training of students in sanitary engineering, a field in which he foresaw a large demand for men of adequate equipment.

"Dr. Kinnicutt was keenly interested in Worcester's health problems. His advice was constantly sought in regard to methods of sewage disposal. He kept a careful watch upon the city's water

supply. During the "water famine" of the present winter, from his sick-bed he directed the tests to be taken, had daily reports brought to him, and outlined the methods by which in his opinion the city's health might be best safeguarded. He was one of the prime movers, several years ago, in the effort to secure a pure milk supply in summer for the babies in needy families, and gave liberally of his time, skill and money to that philanthropy. At the time of his death he was a member of the Worcester Medical Commission, which is studying the question of pure milk for the city.

"Dr. Kinnicutt was widely connected with scientific associations: He was a fellow of the American Association for the Advancement of Science, of which he was vice-president in 1904; a member of the Society of Bacteriology; a member of the American Chemical Society, and president of its Northeastern Section, in 1902; a fellow of the New England Water Works Association; of the Boston Society of Civil Engineers; of the American Antiquarian Society, and of various foreign associations, including the Association of Managers of Sewage Disposal Works of England, the London Chemical Society and the German Chemical Society. His rare social gifts made him a valued member of several clubs: The Bohemians, the Worcester Club, the Worcester Harvard Club and the Tatnuck Country Club in his home city, and the St. Botolph Club in Boston. He always received a warm greeting at gatherings of the Alumni of the Massachusetts Institute of Technology, of the Johns Hopkins University and of Harvard University, for he had many friends in each of these institutions with which he had been connected, and to a surprising degree he kept up his interest in the life and work of each, to the great advantage of his service of the Institute.

"But varied as were his outside associations, Dr. Kinnicutt's life work was as a teacher in the Worcester Polytechnic Institute. As the Institute grew, and differentiation within his own department became necessary, he retained the course in general chemistry with the freshmen and advanced work with the seniors, giving over in large measure to younger men the work with the other classes. The choice was a fortunate one, for it brought him close to the students at the two stages when he could be of most service to them. Not only did this give the freshmen an opportunity to be grounded in the science by the most experienced of the teachers of chemistry, but it also brought them in touch with a most engaging and helpful personality. For Dr. Kinnicutt never considered it his sole function to teach his students chemistry. And so, of a morning, it never surprised his class to find the lecture interrupted for a frank talk on gentlemanly manners or personal hygiene, on legal rights or true and false Tech spirit. As one of his recent pupils said: 'He used to talk to us about the things we needed to know, which none of the other professors touched.'

"In the senior year he met the chemists in a small group so that he could study them individually. He gave of himself liberally in their service and deserved and received their loyal devotion. Nor did this relation end with Commencement, for he followed his graduates in their professional careers with the interest and affection of an elder brother, still ever ready to help them forward. And by precept and practice he impressed the lesson that the Institute should expect her students and her graduates to be not less gentlemen than scientists or engineers.

"He always had the interests of the student body at heart, and gave liberally of his strength and of his means to secure a more healthy and well-rounded college life among Tech men. Through his efforts the use of Newton Hall was secured for the Institute, and for seven years he had the patience to devote a surprisingly large amount of his time to trying to make that experiment a success; and when it became clear that it was no longer wise to continue that enterprise, he put a deal of time and energy into trying to determine whether it was not feasible to transform Newton Hall into a Tech Union, but its location proved too serious an obstacle.

"His personal interest in students did not stop with matters of scholarship or of the formal relations between teacher and pupil. He got them out of their court tangles. He was prompt with advice and aid to those in financial straits. Scores of past students bear witness to the friendly counsel and help which he gave them, always in the kindest way. Through his wide acquaintance in Worcester, he found opportunities for employment for many students, and not a few of his friends were induced by him to aid individual students in their struggles.

"His genial friendliness made him a charming host and entertainer, whether at the laboratory, in his beautiful home, or in social and scientific gatherings. He was liberal in his gifts to many a Worcester philanthropy, as well as to the needy with whom he was brought in personal contact. And he gave of himself not less freely than of his means. His prompt, generous and tactful sympathy is a beautiful memory to many whom he heartened in the darkest hours.

"The Institute owes to Leonard Parker Kinnicutt a debt of gratitude for nearly thirty years of devoted and distinguished service. Yet it was the man, not the scientist, who made the deepest impress. In the words of Prof. William T. Sedgwick, an intimate friend throughout his professional life: 'His personality was unique, lovable and altogether charming. Kindness and friendship such as his life exemplified could not further go. He was critical, yet just; fearless, yet considerate of others; honest to a fault; a hard worker; and to a degree nowadays unusual, an accomplished and cultivated gentleman.'"

1877.

RICHARD A. HALE, *Sec.*, Lawrence, Mass.

The annual reunion and dinner of the class of '77 was held Wednesday evening, March 1st, at the Technology Club, Boston. President C. F. Lawton presided and eleven other members were present. Dr. Maclaurin was the guest of the evening and gave some very interesting facts regarding the general situation relating to Institute affairs and the progress being made towards the selection of a new site. The officers elected for the ensuing year were: Joseph P. Gray, president; John Alden, vice-president; and R. A. Hale, secretary and treasurer. A class directory, covering a period of thirty-four years, is shortly to be issued, containing a sketch of the life of each member and half tones showing their faces at the early and recent dates. Those present at the meeting were: John Alden, chemist of Pacific Mills; William B. Bradford, draughtsman, U. S. Navy Yard, Charlestown; E. W. Davis, of the Puritan Press, Boston; W. E. Fairbanks, with J. A. Farrell of Boston; Walter Jenney, president of the Jenney Refining Company, South Boston; Charles F. Lawton, superintendent of streets, New Bedford; George A. Nelson, assistant city engineer, Lowell; A. L. Plimpton, chief engineer, surface lines of Boston Elevated Railway Company; C. H. Peabody, professor of naval architecture, M. I. T.; H. C. Southworth, mining engineer, Stoughton; R. A. Hale, of the Essex Company, Lawrence; George F. Swain, professor of civil engineering, Harvard University, and B. T. Williston, general manager, Hancock Inspirator Company, Boston. After the talk by President Maclaurin, the evening was occupied in general conversation.

1879.

EDWIN C. MILLER, *Sec.*, WAKEFIELD, MASS.

The thirty-first annual meeting of the class of '79 was held at the Hotel Knickerbocker, New York, on Saturday evening, January 21, 1911. The dinner was held with the Technology Club of New York who were holding their annual dinner. Those present were Fred H. Lane, Walter Large and Edwin C. Miller. Mr. Jenks and Mr. Fullerton were expected but were unavoidably detained. Many of the class were away from their homes, some being abroad, which explains the small attendance. B. H. Locke, '72, and D. W. French, '83, were seated at the same table with '79. It was with much sorrow that the secretary of the class, just before the dinner, learned of the death of our classmate, Horace J. Howe, on the morning of January 21, at his home in Yonkers, N. Y. A floral wreath was sent for the funeral services as a tribute from the class, and the secretary attended the services held in Yonkers. The

following officers were elected for the year 1910-1911, twenty-one ballots being cast: President, Allan Jenks of New York; vice-president, L. J. Howe of Marlboro, Mass.; secretary, Edwin C. Miller of Wakefield, Mass.; business committee, Richard H. Morgan, Plymouth, Mass., and George F. Blake, Jr., of Worcester, Mass. Letters were received from A. B. Harlow of Pittsburg, Pa., D. C. Hemingray of Covington, Ky., W. S. Stearns of Lockland, Ohio, W. H. Rea of Pittsburg, Pa., George F. Riggs of Carlisle, Pa., L. P. Howe, Marlboro, Mass., George F. Blake, Jr., Worcester, Mass., Col. R. H. Morgan, Plymouth, Mass., Prof. R. W. Lodge, Redlands, Cal. Others sending notices that they would be unable to attend were F. G. Stantial, S. A. Sargent, J. W. Cabot, C. S. Gooding, W. S. Haseltine of Boston, Wilson Eyre of Philadelphia, Horace J. Howe, Prof. William H. Pickering of Cambridge and Henry G. Hall of Salem. An interesting letter was received from Harry H. Campbell, who is still at Hotel Chalfonte, Atlantic City. The speakers of the evening were President Maclaurin, Prof. R. H. Richards, Charles Hayden and others, and were instructive and interesting. Their subject was on the present condition and the future of the Institute. Singing and merriment by the members of some of the younger classes made the evening one of enjoyment.

HORACE JOSEPH HOWE, S. B.

Horace J. Howe, who died suddenly in Yonkers, N.Y., on January 21, 1911, was a graduate of the Massachusetts Institute of Technology in the class of 1879. He studied in the civil engineering course and always followed closely his profession. He was born in Lynn on January 2, 1860, and was graduated from the Medford High School in 1875.

Immediately after being graduated from Technology he was employed with the Erie Railroad Company, then in the construction department of the Northern Pacific Railroad until 1885. During this time he was stationed at Brainerd, Minn., Missoula, Mont., Portland, Ore., Tacoma, Wash., and was employed on bridge work at Coeur d'Alene, Idaho, Brainerd and St. Paul, Minn. Later he was connected with the St. Louis and Sante Fé Railroad and with the late eminent Engineer George L. Morrison. He reentered the employ of the Erie Railroad in 1888.

In 1894 he was employed as an assistant engineer by the Boston Transit Commission, later by the New York, New Haven & Hartford Railroad in construction work at Forest Hills and the New York Central Railroad. In 1900 he became an assistant engineer for the Rapid Transit Railroad and Public Service Commission of the City of New York which position he held at the time of his death.

His work in connection with the moving of the bridge of the Harlem ship canal and construction of the New York Subway

and Manhattan Viaduct showed his engineering skill, judgment and ability in his chosen profession.

He was a member of the American Society of Civil Engineers, Boston Society of Civil Engineers, Municipal Society of Engineers in New York City, National Civil Service Association and the Technology Club of New York, and was author of a paper entitled "Some instances of piles and pile driving," read before the Boston Society of Civil Engineers in 1898 and a paper entitled "Replacement of the Superstructure of the Harlem Ship Canal Bridge," read before the American Society of Civil Engineers in January, 1910, and published in their transaction in June, 1910.

Actively interested in church work he was treasurer of the Unitarian Club of Yonkers which adopted resolutions as follows: "As a citizen he was public spirited and progressive, as a Unitarian devoted, and as a friend true." Resolutions were also adopted by the Yonkers Choral Union of which he was an officer and member for many years.

He was married in 1899 to Stella S. Weston of Medford and leaves, besides the widow, three sons and a daughter. The characteristics which Mr. Howe indicated to his classmates in his youth were those which he showed during his life. "The friends of his boyhood days were those of his young manhood, and those of that period were the friends of his riper age. He showed his devotion to them in kindly acts and never forgot them in joy or sorrow. Every now and then there would come to them from his pen, a cheerful message or some quaint conceit for he had a keen sense of humor.

Of large heart and brain, quiet and unassuming, deeply sympathetic, he was a companion for conversation or restful silence. He greatly delighted in nature and music and was thoroughly appreciative of the best in English literature, finding in his favorite author, Emerson, both enjoyment and inspiration. "No estimate of his life and character would be complete that did not give an important place to his love of little children, not only his own, with whom he was a never tiring companion, but the growing boys and girls of his neighborhood found in him an always interested friend." And such was our classmate who has gone from us.

1882.

WALTER BRADLEE SNOW, *Sec.*, 170 Summer Street, Boston, Mass.

The twenty-ninth annual dinner occurred at the City Club on Thursday evening, February 2. Darrow, French, Gooding Herrick, Munroe, Snow, Strickland and Warren were in attendance.

1885

I. W. LITCHFIELD, Sec., Mass. Inst. of Tech., Boston, Mass.

The '85 class dinner will occur on Saturday, April 15, the Saturday before Easter. We expect this will be the best attended meeting we have ever had.—It is a great pleasure to learn that Dave Baker is now pulling himself together after a siege of pneumonia followed by typhoid fever and attended by other complications. On the first of February he was sufficiently recovered to make the journey to Atlantic City, returning to Philadelphia early in March to slowly pick up the threads of business which he was forced to drop last fall. His welcome letter, received a few days ago, recounts some of the happy days of the reunion at Squam Lake. He closes by saying "The spirit of '85 is, I believe, the true Tech spirit as I knew it."—George Nye is one of the moving spirits in the Technology Club of New Bedford, which is one of the oldest and most loyal of the whole lot. He writes that the entire Tech Club of New Bedford intends to attend the Congress of Technology *en masse*. The writer has enjoyed the hospitality of the New Bedford Club two or three times and it is always a great pleasure to swap stories with the whalers on their own ground.—Dan Lufkin is vice-president of the Texas Company and is now located at 17 Battery Place, New York. Now that our classmate is near the center of the universe his long distance excuses will be of no avail and we shall expect to see him without fail at the next class dinner.—Jim Means who has strayed far from the fold has declared that after all there is nothing so satisfying as the Class of '85 and hereafter will be our star attendant.—Jean Grovner who is one of the county commissioners for Essex County is another wanderer who is beginning to see the error of his ways and whose repentance is about due.—F. J. Kingsbury, Jr., who was with us during our first year and who is now president of the Bridgeport Brass Co., Bridgeport, Conn., is another one of our long lost brethren who has begun to feel the call of the old class and whom we hope to see at our meetings in the future.—From present indications there will be a generous representation at the Congress of Technology, April 10, of the Class of '85.—The Classes of '85, '86 and '87 have selected the same hotel for an *à la carte* dinner on April 10, at 6 p.m.—the Thorndike Hotel, English Room, after which we shall attend the smoker at Symphony Hall. There are particular reasons why every '85 man should attend the banquet at Symphony Hall April 11. Among those who will read papers at the Congress are: F. H. Newell, '85, on the "Reclamation of the Arid West," Tracy Lyon, '85, on "Scientific Industrial Operation," and H. P. Talbot '85, on the "Technical School Graduate; His Strength and his Weakness."—Arthur D. Little has been dashing across the surface of the globe in various directions during the last month or two taking in Europe and a considerable portion of North America

in an attempt to keep up with the enormous increase in the demands made upon him and his concern. The A. D. Little Inc. laboratory is now covering every field of engineering and engineering research as well as productive industry.—Frank Page was one of the dozen or fifteen Tech men who went to Panama with the civil engineering excursion recently.—The twenty-fifth anniversary picture book which is to embalm the experiences of our happy reunion last year probably will not be started until Oakes Ames' automobile breaks down so he can get time to print a complete set of pictures for the secretary.—Harry Barr is now connected with the Lamson Consolidated Store Service Company with headquarters in New York. His work has been connected with the installation of the mailing apparatus in the new Pennsylvania Terminal of that city.—Homer is one of the moving spirits in the rejuvenated Technology Club of Rhode Island at Providence, which is now one of the most flourishing and progressive of all local associations.

1886.

ARTHUR G. ROBBINS, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The following was taken from the minutes of the Cincinnati Commercial Club held April 16, 1910.—The death of a friend inclines one to be eager of expression, with perhaps a shallowness of judgment, and yet when we reach that time of life where we have to look into the great beyond to find most of our friends, then we see things as they are, and our expressions are but the reflections of a matured judgment.

Joseph Swan Neave was born September 16, 1865, and died after a brief illness, March 16, 1910. Thus is told the story of his birth and death—the history of his life he himself has written in letters of gold on the face of our community, and engraved it on the hearts of us, his companions. Do you remember the singular appropriateness of Pope's lines on Addison:—

A friend to truth, of soul sincere,
In action faithful, and in honor clear;
Who broke no promise, served no private end,
Who gained no title, and who lost no friend.

Courageous, loyal, forceful, hopeful, these were the qualities which made his life valuable to the public, coupled with the willingness and eager desire to make the world better because he lived in it. To his friends, to the inner circle, there was that charm of sincerity, that high bred courtesy, that frankness of speech and action, that absolute certainty of friendship, these were the qualities which endeared him to us, and so we feelingly, reverently and in deep sorrow inscribe this minute, in happy memory of Joseph Neave.

1887.

EDWARD G. THOMAS, *Sec.*, 36 High Street, Brookline, Mass.

The annual dinner of the class of '87 was held at Young's Hotel on the evening of February 18, this being the twenty-eighth consecutive year we have dined at this hotel. The following sixteen members of the class were present: Sever, Cameron, Very, Lane, Brainerd, Gay, H. D. Sears, Proctor, Hildreth, Adams, Curtis, E. G. and F. A. Thomas, Tripp, Stewart and Gerrish. The usual business, including the secretary's report and the report on the class fund, including the special Vose account, was duly carried through. Officers of the class for the ensuing year were elected as follows: President, F. M. Wakefield; vice-presidents, Henry Souther and F. M. Crosby. A committee of seven consisting of Lane, chairman, Souther, Sturges, Fish, Sever, Draper and G. Whitney, was appointed to consider and make such preliminary arrangements as seem necessary for the twenty-fifth anniversary of the class in the summer of 1912, and this committee was instructed to consider and carry through any form of memorial commemorating our quarter-century which they may deem wise. After the business was completed, the class listened with extreme interest to a stereopticon talk by Gerrish on the work of the Harvard Observatory and his particular duties there. It was a revelation to the men to learn of the great amount of work being carried on by the observatory, and the mechanical equipment which was very clearly shown and described by Professor Gerrish, was of especial interest because so great a part of it has been invented and constructed by him.

The secretary records with the very deepest regret the death of Frank F. Carpenter, of our class, on February 8. Carpenter did not complete his course with us, leaving to enter business and very early becoming engaged with the paper industry in which his business years were spent. At Winchester he was an honored citizen, a member of the park board and school committee, and for years a leader of the Republican town committee. He was a member of the William Parkman Lodge, A. F. & A. M., the Woburn Royal Arch Chapter, and the Hugh dePayens Commandery Knights Templar. Carpenter is survived by a widow, daughter and a son, the latter of whom is our "class baby," and who is today a tall young man of 22 years. Every member of our class will remember Carpenter as one of the most genial of our men, generous in impulse, helpful in word and action, and deeply interested in all Institute and class affairs. The secretary was directed to express to the bereaved family the sincere sympathy of all his fellow classmates.

New addresses:—F. F. Barbour, 455 Sutter Street, San Francisco.—Gelett Burgess, 327 Second Avenue, New York City.—

H. W. Kimball, Queen City Cotton Company, Burlington, Vt.—
L. H. Olzendan, Room 1108, 347 Fifth Avenue, New York City.—
Fred Thompson, United States Naval Coal Depot, Tiburon,
Cal.—R. B. Young, Suite 67, Equitable Building, Boston, Mass.

1888.

WILLIAM G. SNOW, *Sec.*, 1108 Penn Mutual Building, Boston,
Mass.

Richard Eppes' address has been changed to 24 Bolling Brook Street, Petersburg, Va.—Luther W. Bridges has been sojourning in California.—William H. Blood, Jr., spent a short vacation in Bermuda in March.—David A. Center's address is now 157 Washington Street, Gloucester, Mass.—Stone & Webster's latest general report shows the following interesting figures:

Combined statement of 31 independent Electric Railway, Electric Lighting, Gas and Water Power Companies under the management of Stone & Webster's organization—year ending December 31st, 1910:

Bonds and coupon notes outstanding.....	\$68,328,500
Preferred, Common, and Capital Stocks outstanding.....	79,394,700
Total.....	\$147,723,200
Gross earnings, 1910.....	22,023,126
Net earnings.....	9,771,211
Dividends paid.....	2,885,763
Balance.....	\$2,066,811
Miles of equivalent single track operated.....	1,092
Passengers carried.....	286,943,000
Total connected electric lighting load equivalent to 16 cp. lamps.....	\$2,094,920
Total commercial power load, approximately.....	112,100 H.P.
Total combined power station capacity, approxi- mately.....	185,800 H.P.
of which 84,400 H.P. is generated by water power.	

The class dinner was held at the University Club, Boston, Mass., March 24.—Clarence B. Vorce is with the British Columbia Electric Railway Company, Limited, Vancouver, B. C.—Franklin Henshaw is located in Little Rock, Ark.

1889.

WALTER H. KILHAM, *Sec.*, 9 Park Street, Boston, Mass.

Gardner W. Pearson '89, has been appointed adjutant-general of the forces of the Commonwealth under Governor Foss. Pearson spent one year at the Institute, then three years in Harvard College and Law School, afterwards studying law with Gen. B. F. Butler and practiced with him until his death in 1893. Meanwhile he had been active in politics and was appointed in 1894 postmaster of Lowell by Cleveland. In 1897 he became interested in the militia and went out with Company C, 6th Regt., U. S. V., as a corporal in the Spanish war. He was promoted to be sergeant-major and lieutenant and after being mustered out returned to the ranks as a private. In 1900 he was elected lieutenant; in 1905 captain. Incidentally he served in 1892 on a commission to revise election laws and in 1900 was chairman of the committee on appropriations of the Lowell board of aldermen. His business is largely specialized on patent law, with offices in Lowell, Lawrence and Washington. As a military man he represents the progressive element of the National Guard and has been the leader in certain movements for the benefit thereof.—The annual meeting and dinner of the class of '89 was held January 30, 1911, at the University Club, with 15 present.—A letter from Edward Shepard, in relation to possible publications, was referred to the Alumni Council. The resignation of Jasper Whiting as a member of the Council was received and Henry Howard elected in his place. It was voted to change the date of the meeting to the last Saturday in February. Voted to have the next dinner at the University Club, Boston, and to try a dinner not exceeding \$2.00 in cost. The gratifying responses to the call for assessments brought 56 responses. The opportunity is still open for those who have not sent in assessments to do so.—Mildram is now in business as Strachan, Mildram & Company, incorporated, public accountants and consulting engineers, 59 Temple Place, Boston, with branches at New York, Chicago, St. Louis, Minneapolis and Dallas.—Twenty-one members of '89 were present at the alumni dinner January 4, four of whom were at the head table in various distinguished capacities.—Hobbs, who is president of the National Association of Cotton Manufacturers, made an important address at the special conference recently held at Washington, D. C.—The engagement of E. J. B. Huntoon to Ida H. Vose of East Walpole is announced.—Charles E. Beals, who is field secretary of the American Peace Society at 153 Lasalle Street, Chicago, contributed an important article to the *Sunday Record Herald* of February 26, showing what the city of Chicago could do with the amount now contributed by it to the military expenses of the United States. The secretary is glad to say that Beals recommends that most of this sum, amounting to \$41,000,000, should

be spent towards the architectural beautification of Chicago.—Williston is now located at 27 Kilsyth Road, Brookline, and is in close touch with preparatory work in connection with the opening of the new Wentworth Institute, which is in process of erection on Huntington Avenue, Boston.—Orrok read an illustrated paper on "Experiments on Transmission of Heat Through Tubes" at the Engineers Club of the Sheffield Scientific School on February 24.—Professor Crabtree, head of the department of metallurgical engineering, Carnegie Technical Schools, Pittsburg, Pa., returned last week from Arizona, where he investigated mining properties owned by Pittsburg stockholders.

1890.

GEORGE L. GILMORE, *Sec.*, Lexington, Mass.

Mr. H. P. Spaulding, the artist, held an exhibition of his oil and water color work in the Studio Building, Boston, during the week of March 6 which was very largely attended. Spaulding is planning a trip through the South soon and with his family will probably go abroad early in the spring for a long stay.—Mr. Andrew W. Woodman's home address is now 1111 Hinman Avenue, Evanston, Ill., his business being in Chicago.—Samuel Storow is at 908 Wright & Callender Building, Los Angeles, Cal.—George A. Packard is in the Silver Bow Block, Butte, Montana, where he is engaged in expert mining work.—F. C. Moody is with the Missouri & Kansas Telephone Company, Kansas City, Mo.—Prof. Frederick S. Hollis is at 640 Woodruff Middle, Indianapolis, Ind.—Prof. H. M. Goodwin is receiving congratulations on the arrival December 14 of Richard D. Goodwin, 2d.—C. C. Babb is with the State Water Storage Commission at Augusta, Me.—Mrs. Eliza A. Bean is at Oxford, N.H. (Miss Eliza E. Bickford).—The residence of W. H. Collins is 63 McKinley Avenue, Norwich, Conn. Collins is superintendent of dyeing at the Norwich branch, of the United States Finishing Company.—Edwin F. Dwelley is at 38 Exchange Street, Lynn, Mass.—John E. Dolk, who was with the class for a short time, died October 5, in Berkeley, Cal. He was vice-president and general manager of the Dolk Gas Company of San Francisco and invented and installed the Municipal Salt Water Pumping Plant of Oakland, Cal.—Frederick Metcalf is with the Chase Machine Co., Cleveland, Ohio.—E. B. Raymond's business address is 1624 Frick Building, Pittsburg, Pa. Ned is now with the Pittsburg Plate Glass Co.—The death of Frederick B. Hall is reported under date of October 27, 1910. Hall will be remembered by Course II. men, as he was with us for four years, and in his freshman year was one of the halfbacks on the class football team which scored a victory over '89.—C. O. Churchill is president and secretary of the Westfield Foundry and Valve Company.—Winthrop Coffin, a special of the class of '90,

Boston banker and traction expert, commenced in December an active investigation of the Cleveland Electric Railway and three-cent fare as a financial risk under the Taylor franchise. On Coffin's report will depend whether or not Wall Street will finance the needs of the company without an increase in the maximum rate of fare in the grant to five cents cash and six tickets for a quarter. One matter in which Coffin showed special interest was the franchise in suburbs where five-cent fare is in force. The terms of these franchises, the amount of traffic carried under them and the probable further growth of this traffic will largely control his decision. These suburban fares, together with the penny transfer charge, have put the average rate over the system at slightly more than 3½ cents. A total of \$12,000,000 is needed by the Cleveland Electric line, \$2,500,000 for new cars and power equipment and \$9,500,000 to refund old bond issues and pay off floating debt.—At the annual meeting of the New England Bureau of United Inspection, Edward A. Northey was elected clerk and manager.—The name of George E. Hale has been before the public very prominently the last few weeks through the further \$10,000,000 contribution by Carnegie to the Carnegie Institute. Hale's work in astronomy places him as one of the leading if not the leading astronomer in the world.

1891.

HOWARD C. FORBES, *Sec.*, 88 Broad Street, Boston, Mass.

Remember June 3, 4, and 5, at Osterville! The committee wants suggestions and ideas from everyone. Is there anything you would like to do, or to have done? Write!—Aiken went to Havana, Cuba, on business during February, and ran across Ricker there, and also found that Tom Keene was in town but did not see him. Ricker is assistant general manager of the Havana street railway.—The Bay State Dredging Company, Ltd., has incorporated under the laws of Massachusetts with Hatch as president, and offices at 247 Atlantic Avenue, Boston.—Holmes has been elected treasurer of the Plymouth Cordage Company, taking the place made vacant by the death of his father.

1892.

W. SPENCER HUTCHINSON, *Sec.*, 1235 Morton Street, Mattapan, Mass.

Arthur J. Ober is still located at Newport, R. I., where he has charge of the fortifications work for the government in the district under charge of Lt.-Col. J. C. Sanford, Corps of Engineers, U. S. A., Newport, commanding Narragansett Bay. It is one of the important strategical points of the coast and we confidently look

to Ober to "hold the forts."—Harry J. Carlson, 89 State Street, Boston, took a trip to Jamaica and Cuba last fall and reports that business has taken him, during the winter, to New York, New Jersey and Minnesota. He has just been elected a Fellow of the American Institute of Architects.—John A. Curtin was re-elected a selectman in the town of Brookline at the town meeting on March 2.—Henry M. Phillips is at East Pittsburg with an office at the Westinghouse Electric and Manufacturing Company's factory, representing the United States Navy Department. He passes on all Navy work from the Westinghouse factory.—Walter M. Newkirk has left Detroit where he has been for a number of years with the Buhl Malleable Company and the Detroit Embossing Machine Company, and is now engineer for the William & Harvey Rowland Corporation of Philadelphia, the leading manufacturers of the country of automobile and vehicle springs. He has been with them since September 1, 1910, and is living at Bryn Mawr.—George H. May has come back to Boston and announces his permanent address at Gray Cliff Road, Newton Centre, Mass. He has sold out his imitation leather business, the Fabrikoid Company, and has retired from active business. He expects to be around Boston the coming summer but plans to start on a six months' trip around the world next October.—Joseph B. Lukes is with the Stone & Webster Management Association and is in charge of their enterprises at Reno, Nevada, the Sierra-Pacific Electric Company.—Prescott A. Hopkins has left Philadelphia and come to Boston. He is with Andrews, Jacques & Rantoul, architects, 50 Congress Street, Boston.—Charles P. Holland, Brockton, Mass., has followed banking ever since he left Tech and for three years has been treasurer of the Plymouth County Trust Company at Brockton, Mass.—Henry D. Shute is acting vice-president of the Westinghouse Electric and Manufacturing Company. He went to Pittsburg in 1893 and has been connected with the East Pittsburg factory of that company continuously since. Beginning at the bottom round he has worked up to one of the highest positions. Shute is still a bachelor.—Albert A. Pollard announces a change of address to 310 Kasota Building, Minneapolis, Minn. He completed his work on St. Mark's Church in October and is practicing architecture on his own account. He read a paper on "Economical Applications of Concrete in Rural Construction" at the recent Convention of Northwestern Cement Users Association at Minneapolis.

Edward R. French died at his home in Elizabeth, N.J., November 5, 1910. He entered the Institute with the class of '92 and continued the entire four years taking his degree in the Course in Electrical Engineering. He is remembered by his classmates as a fine fellow, an earnest, hardworking student;

a sincere, conscientious man; a thorough gentleman and withal unassuming and reserved. After graduation he went with the Public Service Corporation of New Jersey and at the time of his death was superintendent of the Central Division of its railways. He left a widow and a son.

Allen French is the author of "The Siege of Boston" just published by the Macmillan Company. It is one of a series of stories of American History issued by these publishers.

1893.

FREDERIC HAROLD FAY, *Sec.*, 60 City Hall, Boston, Mass.

FREDERIC H. KEYES, *Asst. Sec.*, 88 Broad Street, Boston, Mass.

On the evening of the Alumni Smoker held during the Congress of Technology, Monday, April 10, the class will meet informally for dinner at the Boston City Club, 9 Beacon Street, at six o'clock, after which the members will attend the Smoker.—Edward B. Carney, first vice-president of the class, was elected president of the Merrimack Valley Technology Club at the annual meeting held at the Yorick Club, Lowell, Mass., on February 15. At this dinner meeting Henry A. Morss was the guest and principal speaker.—W. W. Crosby has just been reelected for a term of three years to the Woburn School Committee, and is also a trustee of the Choate Memorial Hospital and of Warren Academy. He is a member of the firm of F. W. Dean, Inc., mill engineers and architects.—Herbert N. Dawes sailed for Porto Rico, Saturday, March 18, in connection with business for the Cerro Gordo Fruit Company, and expects to be back some time in April.—Fred N. Dillon has just returned from a trip through the Mediterranean, having visited Gibraltar, Algiers, Nice and Naples. S. Parker Bremer accompanied him as far as Naples on the steamer *Caronia*.—Frederic H. Fay is engineer in charge of one of the three divisions of the newly created Public Works Department of Boston of which Louis K. Rourke, '95, is commissioner. This department was formed by the consolidation of the former engineering, water and street departments, and has charge of all engineering construction work directly controlled by the city. In addition to its division staffs of engineers there is a maintenance force in the several branches of the service numbering in all about thirty-five hundred men. Each division is under the charge of a trained civil engineer. One division, the sewer and water division, has charge of all underground work; the highway or "overground" division has control of the street paving, cleaning, lighting and sanitary work; Fay's division, known as the bridge and ferry division, has charge of the building and maintenance of the city bridges and ferries, and in it is also included grade crossing work and a variety of consulting engineering work formerly done

by the city engineer. Fay has also been appointed commissioner, for Boston, of the Boston and Cambridge bridges. The placing of municipal administrative work under the control of technically trained men rather than under men trained in the school of politics is something of an innovation for American cities and is an experiment which is being watched with some interest.—Charles F. Hopewell is now connected with the firm of Hopewell Brothers, Newton, Mass. This firm was formed in 1906 to manufacture automobile tire covers and other fabric goods; and is today the second largest manufacturer of tire cases in the country. The firm has a large export trade, having shipped 1,500 tire covers to France in January. Hopewell still maintains his machine shop at Cambridge, and is interested in engineering work as well as the tire cover business.—Simeon C. Keith, Jr., chemist and industrial biologist, has been appointed assistant professor of bacteriology on the staff of the sanitary research laboratory of the Institute. This laboratory—supported through the generosity of an anonymous donor who has contributed to date, \$50,000 for the work—has been located, since its establishment in 1902, on one or another of the trunk sewers, at present near the pumping station in Dorchester, and it is making a thorough study of the sewage of Boston.—Harry M. Latham is secretary of the newly formed Technology Club of Worcester, Mass., which he was instrumental in organizing this winter in connection with the State Aid campaign.—H. A. Morss was elected a term member on the Corporation of the Institute, March 8, 1911; '93 is the youngest class represented on the Corporation.—A. F. Bemis took a portion of the course at Colorado College, Colorado Springs, Col. The college, being desirous of having a trustee in Boston, elected Bemis a member of the Board of Trustees some time ago and he is serving in that capacity at the present time. Most of the trustees reside in Colorado, but there are two in New York City, Bemis being the only one in Boston.—Frederic C. Sutter's address is 807 Fort Street, Detroit, Mich.

1894.

PROF. S. C. PRESCOTT, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

McKibben, who since leaving the Faculty of the Institute several years ago has been the head of the civil engineering department at Lehigh University, South Bethlehem, Pa., is one of the members of the large party of members of the American Society of Civil Engineers which has recently visited the Panama Canal. Readers of the *Engineering News* will doubtless get editorial opinion as to the quality of the work done at Panama, as McKibben is a member of the editorial staff of the *News* and spent a large part of last summer in active editorial work. He writes that he enjoys this kind of work very much, and finds it an

interesting and valuable part of his engineering experience.—George Anderson has returned to the vicinity of Boston and is now located at Shirley, Mass.—Tenney is actively interested in the management of the Suburban Gas Company, a large company controlling the light and power of a long chain of towns and cities in Massachusetts and New England.—Loring has left Montreal, where he has had headquarters for several years as an agent of the Hoe Press Company, and is now the president of the Goss Printing Press Company, and makes London his headquarters. Any members of the class or others who happen to be in England can probably learn of his whereabouts by calling at the office at 90 Fleet Street. As agent for the Hoe Company, Loring went over a good share of the world. Loring, Mason, Chace, Schiertz, and Robeson make a quartet of globe trotters or globe workers which it would be hard to beat. Their fields of industry have included all parts of the United States including Alaska, Canada, Mexico, England, France, Germany, China, Japan, South America and South Africa. Schiertz has spent a portion of the winter in Boston, having returned here from his work in China by way of India and the Suez. He spent some time in Germany, visiting relatives, and also “took in” other parts of the Continent. The secretary expected to get a big story from him, but as he has been in Boston so little this has been impossible.—The following men attended the alumni dinner at the Somerset on January 4: Adams, M. S. Chace, H. W. Gardner, F. C. Green, Ferguson, Hopewell, Haven, Nash, Lawrence, Piper, Prescott, H. S. Reynolds, Scott, Wood. The class was honored by the presence of Frank Green, '95, and Walter Piper, '94, at the head table.—A recent dispatch from Washington thus describes the work of our distinguished classmate C. G. Abbot, who has for several years been the director of the Astrophysical Observatory of the Smithsonian Institution:

Washington, March 20—Marked advances in the science of agriculture and a long-distance weather forecast will be made should an investigation now being conducted by the Smithsonian Institution prove that the radiation of the sun varies producing a corresponding change in the earth's temperature. Dr. C. G. Abbot, director of the astrophysical observatory of the institution, confidently predicts that the sun variation theory will be proven, which would constitute great astronomical achievement. To complete the tests which have been and still are being made at the observatory here in Washington (sea level), Mount Whitney (three miles elevation) and at Mount Wilson (one mile elevation) Dr. Abbot finds it necessary to establish a station in the cloudless region of southern Mexico. Observations will then be taken at the new station and at Mount Wilson simultaneously, and if the two sets of measurements should agree the conclusion will be proved. Congress has provided for this trip to Mexico by adding \$5,000 to the appropriation regularly made for the work of the astrophysical observatory to the intense gratification of Dr. Abbot and Secretary Walcott of the Smithsonian Institution, as they are hopeful of success attending the undertaking. While the expedition will not set out for Mexico until next July, when it is hoped peaceful conditions will be restored in the southern republic; the work of preparation already is under way. In speaking of the work Dr. Abbot says:

"When we began to make these measurements there was nowhere in the world any exact scale of measurement of radiation, although physicists had been working in devising instruments for that purpose for about sixty years. Still there remained an uncertainty of 5 to 10 per cent. in the scale of pyrheliometry, as it is called. We have devised several instruments to be used as standards for that purpose, and in this last year we have made a careful comparison of two of our instruments of the most improved type and these agreed perfectly in fixing the scale of measurements. This apparatus is used now as a standard by which to standardize other apparatus which has been sent around the world. We have sent instruments to France and Italy and have requests for them from Argentina, Peru and other countries.

"Our measurements at Mount Wilson have been carried on for several years. The first expedition was in 1905, and we have observed almost daily for six months of each year from 1905 to 1910, excepting in 1907. In 1910 I was fortunate in having two weeks of good weather on the summit of Mount Whitney, which is the highest mountain in the United States. I carried on there complete measurements which were simultaneous with those carried on at Mount Wilson. We have found that the results obtained at Mount Whitney check and substantiate completely the work we were doing at Mount Wilson. Therefore having established a standard scale of measurement and having shown that we get the same results at Washington, Mount Wilson and Mount Whitney, we are now able to state the value of the solar constant of radiation. This value is of an importance equal to that of the distance of the sun in astronomical work. Our measurements show a range of the value of the solar radiation outside of our atmosphere of about 8 per cent.

"Now by taking stations so far apart that no local condition in the atmosphere can affect them both, we may actually prove whether or not these variations are in the sun or are something that we have not eliminated in the atmosphere. If we find them in the sun we shall have made a discovery of the first rank. It is clear that if the sun varies, the temperature of the earth must vary correspondingly, perhaps not always the same in all stations, because the earth is so affected by the presence of water and mountains and the like that not all stations would behave exactly alike; but yet we will be able to find a relation between the radiation of the sun and the temperature of the earth that will be so important to the meteorological service of this country and abroad that undoubtedly this work we are doing will be continued daily at several stations over the world if we shall prove the variation of the sun."

The appreciation of the work that Dr. Abbot is doing is shown in the fact that during the last year the Draper gold medal was awarded by the National Academy of Sciences to Dr. Abbot for his valuable researches in solar radiation.

1895.

GEORGE A. ROCKWELL, *Sec.*, 101 Tremont Street, Boston, Mass.

Copies of the booklet relating to the reunion of last spring were sent to the secretaries of all the other classes and letters of acknowledgment have been received. It is hoped that these booklets will accomplish much in the way of inducing other classes to hold reunions.—Mr. L. K. Rourke is giving great satisfaction as Commissioner of Public Works of the city of Boston and is in much demand as a speaker at civic and other gatherings. His idea of consolidating three of the large city departments under a Commissioner of Public Works has been embodied in an ordinance which has already gone into effect.—The annual winter dinner of the class was held at the Boston City Club on February 7, 1911. The following were present: J. L. Newell, W. S. Williams, F. T. Miller, W. D. Parker, H. K. Barrows, J. E.

Walworth, R. J. Williams, A. D. Fuller, F. L. Richards, E. H. Clapp, John H. Gardiner, G. A. Cutter and G. A. Rockwell. An interesting discussion was had after the dinner as to State Aid and other matters. Later the men adjourned to the pool room and had some exciting games of cowboy pool.—The following changes of addresses are noted: Perley H. Blodgett, P.O. Box 542, New York City.—W. C. Brackett, 10 Bridge Street, New York City.—B. J. Clergue, 235 W. 103d Street, New York City.—Arthur S. Coburn, 15 Huntington Street, Lowell, Mass.—F. W. Draper, Arizona Smelting Company, Humboldt, Arizona.—F. A. J. FitzGerald, FitzGerald & Bennie Laboratories, Niagara Falls, New York.—E. H. Huxley, care of National India Rubber Company, Bristol, R.I.—John D. J. Moore, 30 Church Street, New York, N. Y.—F. C. Schmitz, 220 11th Avenue, New York City.—Walter S. Williams, care of A. D. Little, 93 Broad Street, Boston, Mass.—Frederick A. Woods, 1006 Beacon Street, Brookline, Mass.—E. D. Barry, 524 Frick Building, Pittsburg, Pa.—A. L. Canfield, 40 Wall Street, New York City.—S. S. Clark, 603 Palace Building, Minneapolis, Minn.—A. W. Drake, 1006 Havemeyer Building, New York City.—John H. Gardiner, 158 Purchase Street, Boston, Mass.—John H. Gregory, 17 Battery Place, New York City.—F. W. Harris, 97 Mamaroneck Avenue, White Plains, N.Y.—Geo. E. Howe, care of Lyon & Greenleaf, Wanseon, Ohio.—T. M. Lothrop, 5458 Jefferson Avenue, Chicago, Ill.—H. N. Rust, 42 W. Market Street, Wilkesbarre, Pa.—E. P. Schoentgen, Box 551, Council Bluffs, Iowa.—T. H. Wiggin, care of Board of Health Supply, 165 Broadway, New York City.

Changes in addresses: C. W. Berry, M. I. T., Boston, Mass.—W. C. Brackett, 54 Union Street, Boston, Mass.—B. J. Clergue, 90 West Street, Room 711, New York City.—F. A. Hannah, Hotel Belmont, New York City.—H. M. Haven, care of F. W. Dean, 53 State Street, Boston, Mass.—O. E. Littlefield, M. I. T., Boston, Mass.—Reid McManus, 105 Church Street, Moncton, N.B., Canada.—F. B. Masters, 10 Fenwick Road, Winchester, Mass.—G. H. Matthes, Central Colorado Power Company, 1210 17th Street, Denver, Col.—A. E. Zapf, 248 South Walnut Street, Freeport, Ill.—The following letter has been received from F. E. Matthes:

I feel I rather owe it to the class by this time to give an account of myself. The more so as I missed the reunion last summer—a camping affair, too, I understand, which must have been particularly conducive to ebullitions of good fellowship. But I was just getting ready for a camping trip of my own, at the time, and a protracted one at that, out on the other edge of the continent. All last summer I had been campaigning on the Mount Rainier National Park and laying siege to the mountain itself. It is a glorious mountain fondly believed by the dwellers of Seattle and Tacoma (who are still carrying on a desultory scrap as to whether it shall be Mt. Tacoma or Mt. Rainier) to be the tallest peak within the confines of the United States. I found it is not, but that does not detract a bit from it; there is no grander, superber thing of its kind anywhere. The Fuji-Yama of North America, it rises

like an isolated, snow-capped cone in one magnificent sweep from sea level to a height of nearly 14,400 feet. Better than Fuji, it is laden with gorgeous snow and ice fields that stream down on all sides into long, crevassed glaciers extending down to the very foot. Again, each ice stream has entrenched itself in a profound canyon, leaving only a narrow, rocky rib or cleaver, as it is aptly termed, to separate it from its neighbors on either side. Geologically speaking, the mountain is a truncated volcano, the upper two or three thousand feet of which (a thousand feet more or less on that mountain does not make nearly as much difference as a half inch on the end of a man's nose) once blew off in a great explosion. Two new craters have since built up alongside of each other and it is the snow pile between them that constitutes the present summit. The crater rims themselves are bare, but there is a sufficient heat even today to keep them free from snow. In fact, steam is continually rising along the edges of the craters although their interiors are filled with snow. The proposition is to make a detailed topographic map of the mountain and the park (a wilderness it really is) surrounding it. I have found it an undertaking worthy of my steel. The mere determination of the height of the mountain is an engineering problem in itself. It will have to be solved by triangulation methods, for precise levels are naturally out of the question. But even triangulation will be fraught with difficulties owing to the isolation and the great height of the peak. Fortunately the Creator in His infinite bounty placed the Tatoosh Range where it might be handy to triangulators. (I think "handy" is the proper term, for one instinctively goes on all fours when climbing it.) Its summits provide excellent stations, and it was from them that most of the work last summer was carried on. But the highest peak of the Tatoosh Range is none too high. From it a vertical angle to the crater measures 12 degrees, 50 minutes, more than double what is usually considered safe. And that at a distance of nearly seven miles! Inasmuch as the summit proper is invisible from the Tatoosh Range, it became necessary to erect a triangulation target on one of the crater rims. Accordingly an ascent was made of the mountain, and later a second, to map the craters themselves. One does not care to do that sort of thing very often. It is customary to start at 1 a. m. By sun rise one has climbed 5,000 feet. Five thousand feet in most mountains is all one expects to do in a day. But on Rainier the first five thousand feet don't count. The remaining four thousand four hundred make up for it, however. We can speak feelingly and understandingly on the subject. We were unfortunate as regards weather conditions. On both occasions there was some fog and snow. But the second time was the worse. The wind had hurricane strength and drove ice and lava particles with great velocity through the air, so one could scarcely face it. It threw us off our feet at times, but fortunately without dire results. The crater rim we took by successive rushes between gusts, and once inside we found ourselves fairly well protected. But the height of Rainier has not been finally settled yet. Early snows in October interrupted the work, covering up for the time, at least, our stone cairn on the crater. So we look forward to another season on Rainier. Should any of the class or their friends have intentions to travel out that way, don't let them hesitate to drop in at camp. It is a sort of social center anyway, and I am the man that owns the mountain (they say). Last summer thousands and thousands of tourists visited the park, and I know they went away delighted. It is very accessible, either by rail or automobile, from Tacoma or Seattle, and the new government road is all that can be desired. But one caution! Don't be too ambitious. Don't think you are in a fit condition to tackle Rainier when you have been traveling in a cushioned car for days. Many people make the climb that have no business to do so, and I know of cases where permanent injury to health has resulted in consequence.

1896.

PROF. CHARLES E. LOCKE, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

A. LeBaron Russell, who has been connected with the bond house of E. H. Rollins & Sons in Boston, is now located in Phila-

delphia, where he has charge of Rollins' branch office.—Jimmy Smyser is at present located in Boston, where he is engaged in looking after some of his own patents.—Charlie Stone, Course V, reports change of address, and he is now with the Orange County Lighting Company, Middletown, N.Y.—W. A. Wood, who has been missing in the register of graduates for the last two years, has been found again, and his address is 255 Warren Avenue, Detroit, Mich.—John Tilley has made a move during the past year and is now with Marc Eidlitz & Son, builders, 489 Fifth Avenue, N.Y.—The secretary was in New York the middle of January, and undertook to look up some of the '96 bunch, but found most of them out. Sager was located in his office. He is busy chasing over the country attending to the calls which come to him as a patent lawyer.—Ruckgaber reported that they were not working very hard this winter, some of the jobs which they had on hand having been shut down on account of the cold. His specialty is concrete construction.—At the annual alumni dinner at Hotel Somerset on January 4, '96 turned out eleven members as follows: M. E. Pierce, George Harkness, E. C. Hultman, A. W. Thompson, J. A. Rockwell, C. W. Hapgood, H. C. Lythgoe, A. D. Maclachlan, C. W. Tucker, J. G. Callan, C. E. Locke. An attempt was made at that time to extract some news from the bunch but without much success. Harkness acknowledged that he had changed his job and that he is now with Holbrook, Cabot & Rollins, Boston engineers, and George's particular job is to look after the construction of the new fish pier in South Boston. Pierce owned up to a fondness for pure milk which has caused him to push the bill for pure milk now causing considerable discussion before the Massachusetts legislature. Pierce is not happy unless he is doing something for the public welfare.—An informal class dinner of the '96 men who are located around Boston was held at the Technology Club on Monday, March 6, 1911. The following were present: C. E. Batchelder, J. G. Callan, J. M. Driscoll, Joe Driscoll, M. L. Fuller, H. S. Gilman, F. C. Hersey, Joe Hewitt, E. C. Hultman, H. C. Lythgoe, A. D. Maclachlan, E. S. Mansfield, J. A. Rockwell, F. H. Smith, C. B. Tower, C. W. Tucker, S. F. Wise, C. E. Locke. The class also had as its guest Mr. I. W. Litchfield of the class of '85 and Dr. Frank E. Schubmehl. Litchfield spoke upon the first reunion which the class of '85 held at Doctor Schubmehl's camp, which was so enjoyable that the men would not consider any other place when it came time to hold another reunion last year. Doctor Schubmehl explained the location of the camp, the conveniences, and the opportunities for enjoyment. It is used as a regular boys' summer camp beginning in the latter part of June. After hearing what these two men had to say, the men present would not even suggest that we hold our reunion at any other place than Sherwood Forest, and the matter of location may therefore be considered

as definitely settled. The date which was originally proposed was June 2 to June 6, with the idea that the men could return to Boston in time to attend the Tech night at the Pop Concert on Tuesday, June 6. The season in New Hampshire, however, is about two weeks later than Boston, and it was feared that if we went too early we might encounter cold weather, and it is now proposed that the reunion be held June 15 to 18. This is especially advantageous to the men in Boston, because June 17, Bunker Hill Day, is a holiday and comes on Saturday this year. Before adjourning the class voted that the secretary be empowered to make the necessary arrangements and to appoint such committees as may be necessary. For details of the reunion of other classes at this place, the men are referred to *THE TECHNOLOGY REVIEW* of last October. There is good train service from Boston to Meredith, N.H. (about three hours), and from Meredith the Asquam Auto Stage meets the trains to take passengers one mile to the lake, where a boat is secured to traverse the remaining four miles to the camp. Good automobile roads exist right into the camp. The camp will accommodate fifty men easily and more by a little crowding. There are splendid opportunities for recreation, swimming, tennis, boating, fishing, etc. The town is a mile distant, but the camp is sufficiently isolated to allow the men to be perfectly free to do as they please. Now that the date and the place are definitely settled, every man should make up his mind to be present if possible, and should also communicate with his friends to determine whether or not he can get them to go with him. It is intended that circulars will be issued in the near future giving full details of the whole matter.—Several of the '96 men in New York got together for a dinner at the Technology Club of New York on Wednesday, March 8, and the following report has been sent by Charlie Lawrence. The party included S. D. Crane, T. I. Jones, C. E. Lawrence, H. C. Stevens, Bradley Stoughton, John Tilley, J. E. Woodwell, C. H. Young. As guest of the evening was Mr. F. B. Cutter, '95, who related his personal experiences at Doctor Schubmehl's camp last summer. Several other men had planned to be present, but were prevented from doing so either by absence from the city or other circumstances which kept them away at the last moment. It was extremely gratifying to note the growth of enthusiasm as the discussion progressed, and it was easy to see that each of those present at this dinner, if possible, would join in celebrating our fifteenth anniversary. The result of discussion was a decision to consider going in a body from New York perhaps in automobiles, to some point in Massachusetts, possibly North Adams, and proceeding from that point by rail to the camp, leaving the autos at North Adams for the return journey. Owners of cars generously offered their use for such a party. A canvass was started of all '96 men within a radius of two hundred miles of New York City. The



WILLIAM K. FAIRBANKS, '97

general opinion was that the date should not be earlier than the middle of June. The following quotation is taken direct: "At the close two rousing cheers were given, one being the Tech yell and the other the yell of '96, for which we were loudly applauded by other members of the club, dining in adjoining rooms. You can count on the New York men to coöperate in every possible way to secure a good attendance at the fifteenth annual reunion."—*The Scientific American* of February 4, 1911, contains a description of the methods of handling mail in the new Pennsylvania depot in New York City. The apparatus includes trucks, spiral and direct chutes, belt, conveyors with trippers which deliver the mail automatically inside the door of the mail car. Incoming mail is handled by belt conveyors and plunger elevators. The following is quoted direct, commenting on Mr. Woodwell's work:

The task was to install a complex machine for executing one of the primary functions of a railroad station—mail handling—in waste underground space that had already been reduced to the lowest practicable amount by the unalterable plans of the architects of this unique building. This problem, in which the post-office department was so vitally interested, was entrusted to a mechanical engineer who had already demonstrated special ability and resourcefulness in government work in the treasury department, Mr. Woodwell, of the firm of L. B. Marks & J. E. Woodwell, consulting engineers, New York City. His solution, a most remarkable one, in departing almost entirely from conventional methods, by reason of the inflexible restriction above referred to, has proved a success in the uninterrupted facility with which the mails have been handled from the start. The electric-motor operated apparatus for handling the outgoing mail was put into motion coincidentally with the opening of the new railroad station and worked without a hitch, thus demonstrating on the first test the capacity, speed and smooth working of the machinery.

1897.

JOHN ARTHUR COLLINS, *Sec.*, 67 Thorndyke Street, Lawrence, Mass.

An informal dinner and reunion of '97 men was held on Tuesday evening, January 31, at the City Club, Boston. Thirteen were present as follows: Bradlee, Breed, Worcester, Hopkins, Lamb, Sawtelles—Billy and Harry,—Olin, Russell, Burdick, Hosmer, Fuller and Collins. A jolly evening was spent, although saddened somewhat by the news brought by Lamb of the death of our classmate, Kendall Fairbanks. (Further details of this event are given elsewhere in this issue.) The dinner had been planned by a committee consisting of Bradlee as chairman, Worcester, Hopkins, Breed and Lamb, and was most successful, although it would have been—in fact *should* have been—attended by a much larger number. Quite a number of men who live in and around Boston failed to appear, while on the other hand several came over one hundred miles to be present. So happily was the even-

ing spent that before breaking up, it was voted to hold a similar gathering on Tuesday evening, March 28, at the Colonial Club, Cambridge. Dinner will be served as before, and it is planned to have some bowling matches afterwards. Due notice will be sent out later in regard to this. The secretary hoped that many of the fellows would send him word of any changes in position, or of some events that would interest their classmates. But thus far not 5 per cent. of three hundred and fifty have replied, so he has accepted the usual and inevitable result.

"Gus" Lamb recently informed the secretary that *last June* he was promoted from the New York office of the American Writing Paper Company to the general offices at Holyoke. So I am transmitting the news (?) late though it be, to all who may or may not be interested. If the fellows who make changes would simply send a note of the same to the secretary, it would help him to keep this column up to date. By the way, one of the features at the reunion at the City Club on January 31 was Lamb's singing of his old-time favorite, "D'ye think I am too small, d'ye really think I am?"—Gilmore (VI.), for fifteen years with the Stanley Electric Company of Pittsfield, particularly in the transformer testing department, has resigned, and is now with the Electric Bond and Share Company, whose principal office is in Schenectady, but with a branch office at 71 Broadway, New York City.—W. G. Hill (V.), is with the Apsley Rubber Company of Hudson, Mass., makers of rubber boots, shoes and clothing.—H. D. Jackson (VI.) who is associated with T. W. Sprague and F. H. Keyes as consulting engineer, reports work being done on a design for a power plant for a coal-mining station in West Virginia, plans for a shoe factory in Marlboro, and also testing for electrolysis in various sections of New England.—From the catalogues of engineering books we learn that Blood (I.), in collaboration with Walter E. Silsbee, has issued a book on Special Railway Work, which is described as "a valuable collection of data on special track work, which has not hitherto been published, nor been available outside of a few special offices."—Also that Sellew (II.) has in preparation a book on the Steel Rail, taking up in detail the development of the present section, the pressure on the rail, supports and stresses of rails, and a comparison of standard specifications. The book will be published by D. Van Nostrand Co.—Wadleigh (II.) is at present in St. Louis, superintending extensive changes in power plants belonging to the Bemis Bros. Bag Company, with whom he has been connected for some years.—Hammond (I), who is with Conners Bros. Company of Lowell, general engineering contractors, has just returned from Porto Rico, where he had been in connection with some work.

KENDALL FAIRBANKS.

By the death of Kendall Fairbanks, '97 loses one of its most jovial members and one who believed in keeping up class organization, class spirit and class interest. He was present at all the various dinners and reunions held since our graduation, and no one contributed more on those occasions to the jollity of the event than did he. The last time he was with us, was at the meeting at the Ferncroft Inn, in 1909, and that evening will long be remembered by those who were there.

For a period of over a year, Fairbanks faced a very critical condition and after many consultations it was decided to perform an operation. This operation was to relieve the pressure of the optic nerve at the base of the brain caused by glandular enlargement. But one similar operation had previously been performed and at first it was believed that the operation on Fairbanks had been successful. The patient rallied well, but complications set in and death resulted. At the funeral services, which were held on Wednesday, February 1, from Mt. Auburn chapel, Bradlee, Hopkins, Humphries and Eames were in attendance and a floral offering was sent from the class.

1898.

ERNEST F. RUSS, *Sec.*, 70 High Street, Boston, Mass.

It is with deep regret that we learned of the death of Thomas Wendell Bailey on December ninth last year.

F. L. Bishop is at the University of Pittsburg.—William D. Blackmer can now be reached in the Wright & Callender Building, Los Angeles, Cal.—Ira M. Chase, Jr., is in New Bedford.—Hurter, Charles S., is back again in Wilmington, Del.—Edward P. Lane's address is 335 Madison Avenue, New York City.—William A. Marshall, who, up to a few months ago, was with the New England Gear Works in Boston, has gone to investigate some mining property at Austin, Tex., and can be reached care of Austin Manhattan Consolidated Mining Company.—Muhlig, J. F., has gone to Burlington, N.J. His address is 207 East Union Street.—Packard, A. A., is in New York City.—Charles H. Pease, who for a number of years has been located in Boston, is now in Marlboro, N.H., with the Monadnock Blanket Mills.—Perley is now at Lowell, Mass., and his address is Box 433.—Shirley S. Philbrick's concern is Philbrick & Foster. He is still in the State of Washington, at Clarkston.—W. W. Staples is at St. Louis, Mo.—Winslow writes from New York City that Edgerly and Lansingh have recently been elected to the Board of Governors of the Technology Club of New York.—Coffin has been appointed

Assistant Professor of Physics at the College of the City of New York.—Roger Babson has recently inaugurated a new branch to his statistical work which promises to be of wide interest in the business world. Already he has a splendid system of statistics, and with this as a basis he forecasts business conditions a number of months in advance. His articles on finance, which have recently been published in the *New York Sunday Times*, have attracted wide attention.—Cutter has an office at 50 Church Street, New York City, where he deals in second hand machinery of all sorts.—Edgerley has left his old position to become secretary of a new company, the Debevoise Company, dealing in paints and oils.

Announcement was made yesterday by Horace De Lisser, vice-president of the United States Motor Company, of the appointment of David C. Fenner as sales manager for the Alden-Sampson Manufacturing Company. Fenner has had eight years experience in the automobile world and knows freight and delivery motor organization and selling. He is a graduate of Yale Sheffield and Massachusetts Institute of Technology. After five years with the Bethlehem Steel Company he joined the Knox Automobile Company. He succeeds C. E. Stone, who has been appointed manager of the New York office of the company.

1899.

H. J. SKINNER, Sec., 93 Broad Street, Boston, Mass.

S. B. Robertson has recently been appointed superintendent of the Erie & Ashtabula Division of the Pennsylvania lines west of Pittsburg.—The engagement of C. G. Barry to Miss Martha Imogene Stevens was announced recently. Barry is with the Cape Cod Construction Company on work in connection with the Cape Cod canal.—A. L. Hamilton is president and treasurer of the International Tag Company, 661 West Lake Street, Chicago.—F. F. Fowle's second son, William Cowper Fowle, arrived recently. Fowle writes: "Bill is a fine, husky lad and will soon be able to give his big brother a run for his money."—Haven Sawyer is with the Boston & Idaho Gold Dredging Co., Idaho City, Idaho.—The following changes of addresses have been received: Newton D. Benson, Circuit Drive, Edgewood Station, Providence, R.I.—Willard T. Cannon, 424 Judge Building Salt Lake, Utah.—D. C. Churchill, 287 Fourth Avenue, New York, N.Y.—Charles D. Drew, J. G. White & Co., Ltd., La Calera, Cordoba, Argentina.—Dwight Farnum, 400 Ernest & Crammer Building, Denver, Col.—John B. Ferguson, J. B. Ferguson & Co., Hagerstown, Md.—Fred A. Fifield, 189 Dowling Avenue, Toronto, Ont.—G. R. Heckle, W. J. Dickey & Sons, Oella, Baltimore County, Md.—Henry H. Hewitt, 901 Mining Exchange, Denver, Col.—Frank J. Huse, 2624 Thayer Street, Evanston, Ill.—Henry

P. James, Cutler-Hammer Manufacturing Company, Milwaukee, Wis.—A. Wallace McCrea, 23 East 15th Street, New York, N.Y.—W. Scott Matheson, 218 18th Avenue, North, Seattle, Wash.—Carl S. Milliken, 950 New York Avenue, Pasadena, Cal.—Charles, B. Page, Pennsylvania Iron Works Company, Eddystone, Pa.—W. Rogers Parker, 11 Court Street, Arlington, Mass.—Lewis W. Riddle, 651 First National Bank Building, Chicago, Ill.—Edwin R. Sheak, 10 Beech Road, Brookline, Mass.—Frederic B. Stearns, 122 Ames Building, Court Street, Boston, Mass.—Walter H. Sutliff, 802 Columbia Building, Cleveland, Ohio.—Charles W. Swift, 213-217 L. Street, S. W., Washington, D.C.—Fredric Tappan, 435 Carroll Street, Vancouver, B.C.—Prof. J. H. Walton, Jr., University of Wisconsin, Madison, Wis.—W. W. Wells, 380 7th Street, Brooklyn, N.Y.

1900.

INGERSOLL BOWDITCH.

GEORGE C. GIBBS.

N. J. NEALL, *Sec.*, 12 Pearl Street, Boston, Mass.

RICHARD WASTCOAT.

PERCY R. ZIEGLER.

The time has come when every graduate of Technology must put aside his customary indifference to matters connected with the Institute and work with all his might to help it establish itself in its new location (as soon as that has been decided upon). If the different classes are to be of the greatest assistance, it will be necessary to have more class interest than most members of our class have shown, in order that Technology may obtain what it deserves. To show how much interest is taken in the work of the class committee by men outside of Boston, only five members out of twenty-five to whom letters were sent, responded. The list was chosen in such a way that if all had answered, news would have been published from widely different parts of the United States about men in many different kinds of business. The committee is glad that there are a few men who consider Technology and our class worth while, and it wishes to thank them for the encouragement which has been received.—At the last class dinner, January 23d, the following men were present: Bowditch, Neall, Reardon, Burns, Ashley, Bugbee, Emery, Richardson, Russell, Wentworth, Howe, Burnham, Wedlock, Learnard and Tucker. After the dinner Brown and Ziegler came in to hear Mr. Litchfield explain the reasons why Technology was asking the state for a grant of \$100,000. Burns, who is a member of the House of Representatives, from Salem, told the fellows what they wanted to do in order to persuade the legislature to vote for this grant. At the hearing before the committee on education, Bowditch and Ziegler were present to represent the class, and it must have been their influence that persuaded the committee to report

in favor of the bill.—Arthur Constantine of the Boston *Herald*, was present at the dinner given for M. Baklanoff, of the Boston Opera House, on Tuesday, March 7th. From the account which he wrote in the *Herald*, the dinner must have been a great success. Why doesn't Constantine come round to the class dinners and write an account of them for the TECHNOLOGY REVIEW?—Reimer (I.) has finally become on friendly terms with the post-office authorities at East Orange, N.J. Some time ago, at least two letters were sent to him which the government evidently refused to deliver, as he never answered them, but now he has answered two inside of two weeks, which shows that he must have received them. I wonder if Reimer is still collecting pennies for the missionaries in China?—W. C. Dean (VI.) writes that he is building, at Norfolk, Va., a 32-foot cabin cruiser, which will accommodate four grown-ups and two children. He gives the class an invitation to sail with him any time after next June. Chalmers (X.) had the pleasure of seeing him for a few minutes while he was on a trip to Washington. Dean advises those having business in Washington to take a trip to Norfolk and Old Point Comfort, where he will be glad to entertain them.—Seaver (I.) seems to have the same opinion of Tech men in Pittsburgh as the class committee: they do not have time or perhaps inclination to do anything with each other. He is the chief engineer of the Harbison-Walker Refractories Company, and is called in consultation with a great many engineering and technical troubles which have absolutely no relation to fire brick, magnesia brick, chrome brick or silica brick which his company manufactures, and in a good many instances has been able to be of use. This firm gets out books on technical subjects, the one on "Open Hearth Steel" requiring an added edition of 6,000 copies and 4,000 additional copies were printed on "Blast Furnaces." He has just written an article in the *Iron Trade Review* on "Open Hearth Practice." He is thinking of writing his next article in poetry, a sample of which he sent in his letter. Those who were at Cherryfield remember Seaver as the star pitcher of the summer school team, of which Bowditch was the catcher.—D. E. Maxfield (II.) extends a cordial invitation to call on him, to any member of the class who may be in his vicinity. The D'Olier Engineering Company has become the Lathbury D'Olier Company and he has moved with it to the Morris Building, 1421 Chestnut Street, Philadelphia. This company has over \$400,000 in government contracts.—Karl Burroughs, of Rumford, Me., very kindly subscribed \$5 to the class fund. He is evidently very busy, as he gave no news about himself.—In a letter to Neall, George H. Mead (II.), Chillicothe, O., stated that he has been able to keep out of jail as well as matrimony. If he thinks the latter is as bad as the former, let him ask Dick Westcoat. He has been pretty heavily involved in work, but hopes to come to New England in the spring.—Robert

S. Blair (VI.) is a member of the law firm of Duell, Warfield & Duell, 2 Rector Street, New York. He went to the Patent Office in the spring of 1901 and studied law during the next three years. For the past seven years he has had pretty steady work. He sees Fulton very often, Hall occasionally, and Hopkins once in a while. They are all being very successful in engineering work. He finds it hard to get out of a rut, but is glad to know that the Boston men are seeing a little of each other.—William P. Rand is very modest and does not think of anything he has done that will interest the class. He does not know how easily the class is interested. As he has not seen any 1900 men for a year, perhaps he may be excused this time.—S. M. Hall (VI.) has been eight years with the Garwood Electric Company, New York, and enjoys the work, as the engineering problems which he has to solve are not at all monotonous. He has twin girls two years old and a boy of six. He sees R. M. Hopkins frequently, and once in a while runs across Fulton and Blair. Ellis (V.) lives near him at Montclair, N.J.—F. D. Warren has been very busy lately, and has been unable to join the class at the informal dinners. Judging by the amount of work he is doing, he is to be excused. His firm, Warren & Gerrish, in the last season has designed and caused to be erected a warehouse in Charlestown and in New Bedford, a factory in Charlestown and in Cambridge, a garage in Annisquam, and a power plant in Spencer.—Carleton Ellis is the inventor of the class, and sends the following notice about himself:

Carleton Ellis has been made a charter member of the Inventors' Guild, an association organized last summer for the purpose of endeavoring to secure greater recognition and better patent protection for the inventors of the country. Several bills have been before Congress lately having to do with the establishment of a Patent Court of Appeals, revision of the practice in the Patent Office relating to procedure in interferences and the like, and along this line the Inventors' Guild proposes to work to secure full acknowledgment and protection for the rights of inventors. The Guild is limited in its membership and includes such representative inventors as Peter Cooper Hewitt, T. S. C. Lowe, James Gayley, Thomas A. Edison, Dr. L. H. Baekeland and Prof. M. I. Pupin.

—Whoever writes the class letters can always rely on Jim Batcheller for news about himself, and this news is always interesting. Lots of others could write just as well as Jim if they were only as public spirited. He is working with Leach, who is vice-president and general manager of the Britannia Mining & Smelting Co., Limited, and during the latter's absence Jim is as "busy as a dog with two tails to wag." On his way from Boston he stopped at Houghton, Mich., and studied copper mines and the treating of the ore. From there he went to Ishpeming and visited a lot of big iron mines; thence to the Memominee District and spent a month in close detailed study of the Chapin Mine, one of the oldest and yet one of the biggest iron mines of that section. He had an offer to go to Korea, but declined, much

to his delight, and went to visit relatives in Lake Itasca District. In September he went to Britannia Beach to help Leach, who had broken down from over work, but has now recovered, thanks to Jim's efficient help.—Wentworth furnishes the information that Bill Stone was recently in town, and of course had to see the triplets. Wentworth's oldest boy was scared of Bill because he thought he was a giant.—Sears was in town about a month ago and seemed satisfied with his work in Mexico.—Some of the fellows received quite a shock the other day when they received the announcement of Dick Wastcoat's marriage to Miss Clara Louise Prescott, on Wednesday, February 15th. They will be at home in Taunton after June 1st. The class committee hope that Dick won't forget that he is needed at the meetings, although Ziegler and Bowditch, being married, know how hard it will be for him to leave home. Gauss writes as follows from Salt Lake City:

I have been all over this western country: British Columbia, Washington, Oregon, Idaho, Montana, Arizona and Utah, so that I have become a pretty fair practical miner. At present I am trying to get back to something that will permit of a white collar. This past year I spent at Ray, Ariz., but left there on the 13th of December. Until you have spent a year away from the sight of a street car, you cannot appreciate the joy there is in riding upon them once more. That soon passes, however, and you want to go faster and as a natural result begin on joy rides. However, I immigrated from Phoenix before my roll had quite evaporated.

Most of the 1900 men I have heard about have made good. I understand little Arthur Constantine is a big gun in telephone circles. Gibbs is being made good literally. Whatever happened to Graff? I suppose Draper has a large family by this time. Did you know that Cates, the superintendent at Ray, was a 1902 Tech man?

—Leigh S. Keith is with McMeen and Miller, Chicago. He hopes some time in the future to send on a lot of news. He is too busy to do it now.—L. L. Cayvan has promised to subscribe to the TECHNOLOGY REVIEW in order to keep in touch with the class news. All this is due to the untiring efforts of Neall. He is superintendent of a baking plant in Grand Rapids, Mich., and can make any baked goods in any climate or altitude. He has a very fine collection of stringed instruments, such as violins, viola, cello, bass, etc. "Some of our young chemical students will find many subjects relating to flour, fats and yeasts worthy of serious investigation. The business is still a rule-of-thumb bunch of facts and not well systematized."—The reason why Tech men have little class spirit compared to graduates of other institutions is that they are working too hard and do not realize it until it is too late. A very good example of this is Morton Mott-Smith. He is practically doing the work of two men and perhaps more. He is teaching physics at Waterville to sixty men and forty girls from the backwoods of Maine, besides putting forty-five men through a laboratory course with insufficient

apparatus and assistance, besides a course in thermo-dynamics and astronomy. This is a pretty big job for one man to undertake.

In the last REVIEW the death of Rondel Lewis was mentioned. He entered the class in 1896 and sustained an excellent record in the special department of chemistry. He served with the Metcalf Drug Company, Carter Ink Company, and was chemist for the Metropolitan Water Board during the preparation of the great reservoir system near Clinton, Mass. He died on June 23, 1910, after a few days' sickness, from meningitis. He left a wife and two little sons to mourn him.

The following changes of addresses have been received: James E. Barker, 1627 Reid Street, Los Angeles, Cal.—Charles C. Briggs, Hotel Boris, Woodburn, Ore.—Ethel F. Brooks, 25 Overlook Terrace, Yonkers, N.Y.—M. E. Brooks, Kettle Valley Lines, Midway Bl, Canada.—F. D. Buffum, care of Col. O'Toole & Assoc., Scottdale, Pa.—L. L. Cayvan, 317 Madison Avenue, Grand Rapids, Mich.—Walter N. Charles, 364 Waltham Street, West Newton, Mass.—Percival Clow, 872 East Thirty-fifth Street, Brooklyn, N.Y.—G. W. Cutting, Jr., School Street, Weston, Mass.—W. A. Dorey, 412 Hudson Avenue, Newark, O.—C. F. Gauss, Box 1422, Ray, Ariz.—L. W. Godfrey, Mozart, Bucks County, Pa.—Dr. Milton W. Hall, Murray Hospital, Butte, Mont.—Arthur L. Hamilton, 661 West Lake Street, Chicago, Ill.—Cyrus H. Hapgood, 171 Kenyon Street, Hartford, Conn.—Dean Hinman, 1125 West Third Street, Red Wing, Minn.—Herman R. Hunt, Kittery, Me.—Daniel S. Johnson, P. O. Box 992, Goldfield, Nev.—Walter R. Kattelle, Treasury Department, Washington, D.C.—William A. Kingman, Arch Street, South Framingham, Mass.—George W. Knight, 641 Washington Street, New York, N.Y.—Lewis M. Lawrence, 122 Ames Building, Boston, Mass.—Francis C. Lincoln, care of Ricketts & Banks, 104 John Street, New York, N.Y.—Francis H. McCrudden, Rockefeller Institute, Sixty-sixth Street and Avenue A, New York, N.Y.—Sumner M. Manley, 3616 Jefferson Street, Kansas City, Mo.—George H. Mead, Mead Pulp & Paper Co., Dayton, Ohio.—George B. Moody, 1328 Washington Street, Bath, Me.—M. C. Mott-Smith, 13 Bartlett Street, Waterville, Me.—Thomas D. Perry, City Hall, Grand Rapids, Mich.—William P. Rand, 487 West 135th Street, New York, N.Y.—Louis A. Sohler, care of Traction Company, Everett, Wash. Willard W. Stone, R.F.D. 3, Newburgh, N.Y.—Charles H. Stratton, New Post Office, Danville, Ill.—Harry M. Thayer, Port Ivory Factories, Proctor & Gamble Mfg. Co., Staten Island N.Y.—Arthur B. White, care of Bixby & White, 502 Mason Building, Los Angeles, Cal.

It is with great regret that the Class Committee has to announce the deaths of Paul R. Brooks and Harrison E. Ashley. Brooks

served on the Class Committee while he was in Peabody, Mass. and rendered great assistance in the plans for the reunion, and in putting the machinery of the class in working order. He had a great future before him and took a great deal of interest in his new work in Texas. The cause of his death is not known to the committee, but it is feared that he died of fever. He died in Chicago.

1901.

ROBERT L. WILLIAMS, Sec., 154 Magazine Street, Cambridge, Mass.

Replies to the letter sent out by the secretary for news for our First Decennial Record Book are coming in slowly, about one hundred having been received at the present writing. If this book is to be a success it is necessary that those who have not written do so at once. While a blank form was mailed for the convenience of the class, a brief account of each man's experience since leaving Tech, in his own words, would make the book more interesting reading in that it would have a personal touch.

So wake up, fellows, and get busy unless you want your name to appear in the list of deceased and unheard from.—*The Examiner*, San José, December 17, has the marriage notice of Francis Kernan Baxter, Jr., head of the department of mining of the Associated Oil Company of Utica, N.Y., to Miss Helen Emelia Haas. Their honeymoon was spent in Southern California.—Ellis F. Lawrence writes in reply to the secretary's letter, "Enclosed please find photographs of three little 'Naughty Ones.' Their names and ages are on the back. I shall watch for the Record Book with interest to find if any one can show three better ones." They are certainly a fine lot of kids and the class will have to hustle to beat them.—A. K. Trenholme is located in Portland, Ore., and has charge of a department of the Manual Training Works in the public schools.—A. P. Merrill is doing well in Tacoma, where his firm, Potter and Merrill have the contract for a "Skyscraper," the new Commercial Club building.—Frederick G. Clapp continues to spend his time examining and reporting on oil and gas properties for various large companies. For the past year most of his time has been spent in Ohio, where important fields are being developed. Clapp is the originator of the term "Geological Engineer" and has a large consulting practice. He maintains offices at 331 Fourth Avenue, Pittsburg, Pa.—P. A. Potter is with Nicholas S. Hill, Jr., Consulting Hydraulic Engineer, New York City. His specialty is water supply investigation and water works construction.—George A. Cowing is treasurer of the Harkness & Cowing Co., Cincinnati, O.

Chester N. Chubb is superintendent of the Sioux Falls Gas Company.—F. Ward Coburn has delivered a lecture before the Engineer's Club of Sparrows Point, Md., on the "Bessemer Process."—W. J. Sayward since leaving Tech has traveled through England, France, Switzerland and Italy. He is the junior member of the firm Willcox & Sayward, Architects, Seattle, Wash.—Harry E. Dart with the firm of Buck & Sheldon, civil engineers, Hartford, Conn., is in charge of their mechanical and electrical work.

The following changes in addresses have been received recently:—G. C. Peterson, Duxbury, Mass.—Prof. J. A. Ross, Jr., Lafayette College, Easton, Pa.—Prof. A. N. Rowe, 295 Commonwealth Avenue, Boston.—E. P. Burdich, 808 Firemen's Building, Newark, N.J.—H. T. Chandler, 20 Blue Hill Avenue, Mattapan, Mass.—F. S. Clapp, 331 Fourth Avenue, Pittsburg, Pa.—F. N. Emerson, 321 Main Street, Peoria, Ill.—George T. Hyde, 157 St. James Street, Montreal, Canada.—D. A. Kohr, 130 Oxford Avenue, Dayton, Ohio.—Robert W. Bailey, 503 8th Avenue, Brooklyn, N.Y.—F. K. Baxter, Jr., 1839 Hayes Street, San Francisco, Cal.—E. P. Beckwith, Garrison, N.Y.—R. H. Brown, 21 West 127th Street, New York, N.Y.—Charles W. Cade, 35 Norfolk Road, Arlington, Mass.—A. B. Campau, 450 Houseman Building, Grand Rapids, Mich.—C. F. F. Campbell, 5733 Forbes Street, Pittsburg, Pa.—G. W. Carter, 110 State Street, Boston, Mass.—F. W. Coburn, Toledo Furnace Co., Toledo, Ohio.—R. E. Dow, General Chemical Company of California, Martinez, Cal.—Mansfield Estabrook, 141 Milk Street, Boston, Mass.—L. S. Florsheim, 729 Milwaukee Avenue, Chicago, Ill.—H. S. Folsom, 324 E. Market St., Los Angeles, Cal.—M. I. Giel, 290 West Street, Flatbush, Brooklyn, N.Y.—G. E. Gustafson, 3748 Maple Square Avenue, Chicago, Ill.—A. W. Higgins, Chesapeake & Ohio Coal & Coke Co., Grand Rapids, Mich.—T. F. Louge, 443 East 138th Street, New York, N.Y.—E. F. Lawrence, 1021 Chamber of Commerce building, Portland, Ore.—H. P. Macdonald, Snead & Co., Iron Works, Pine Street, Jersey Street, N.J.—Miss Grace Macleod, Pratt Institute, Brooklyn, N.Y.—F. I. Merrick, 341 Sixth Avenue, Pittsburg, Pa.—H. C. Morris, 112 West 72d Street, New York, N.Y.—D. L. Ordway, 1428 Ridgewood Avenue, Lakewood, Ohio.—H. P. Parrock, 575 Old Colony Building, Chicago, Ill.—Langdon Pearse, 5529 Cornell Avenue, Chicago, Ill.—J. M. Perkins, 498 Helen Avenue, Detroit, Mich.—A. C. Persons, 5 Lincoln Avenue, Willimantic, Conn.—A. W. Peters, 53 Lincoln Street, Boston, Mass.—E. J. Proulx, Box 190, Glenside, Pa.—F. W. Puckey, 5207 Washington Avenue, Chicago, Ill.—A. J. Taylor, 1900 Van Buren, Wilmington, Del.—A. K. Trenholm, 1914 E. Washington Street, Portland, Ore.—H. R. White, 189 Amherst Street, E. Orange, N.J.—W. S. Wildes, State Hall, Albany, N.Y.—C. F. Willard, 127 Grout Street,

Camden, N.J.—S. L. Wonson, 307 Title Guaranty Building, St. Louis, Mo.

Mr. Langdon Pearse, assistant engineer for the Sanitary District of Chicago, gave an illustrated lecture on March 11 at the Detroit Museum of Art on "Modern Ideas as to the Desirability of Pure Water, in Connection with Water Supply and Sewage Disposal." Mr. Pearse made particular reference to conditions in various typical lake cities.

1902.

F. H. HUNTER, *Sec.*, 75 Park Street, West Roxbury, Mass.

Since the last issue of THE REVIEW went to press the class has had its annual bowling party. This was held on Monday, January 23, at the Adams Square alleys, in Boston, and was preceded by an informal dinner at the Rathskellar. The numbers were less than previous years, but in spite of this a jolly good time was enjoyed by those on hand. The record for the class was never endangered during the evening, Austin Wood coming the highest on the average. Sherman was high man for a single string. If Hall had but kept more of his balls on the alley he might have done most anything, for his execution, at times, was deadly.—At the alumni banquet at the Somerset in January there was a good turnout of '02 men: Fisher, Patch, Vaughan, Finneran, Robinson, Reynolds, Pendergast, Fitch, J. W. Smith and Hunter.—At the annual dinner of the Technology Club of New York on January 21 the classmates on hand were Annett D. R. Franklin, Grant Taylor and Wemyss.—Since the last issue of THE REVIEW the class reports for the year have gone out and have brought in many responses, both in the shape of dues and of letters. There are many yet to be heard from and if this line serves as a reminder that *you* have not answered, the chance to set your conscience at ease is still open—at the usual rates.—Pendergast is in the main office of Stone & Webster helping them design power stations.—Walker is with the White Investing Company, Sears Building, Boston. Since his marriage he has been living in Winthrop.—Jimmy Smith has moved into a new house on Olive Road, Lexington, the plans for which were drawn by Roger Greeley.—Eames is in the mechanical laboratory at the Institute.—Edwards has established an office as a chemist in the Railway Exchange Building, Portland, Ore. He is making a specialty of cement testing.—Charles Boardman (not C. H., Jr.) is with Sprague, Keyes & Jackson, electrical engineers, 88 Broad Street, Boston.—Large increases in the cradle roll of the class have been reported.—From Tacoma we hear of John Wiltshire Morse who arrived there on June 11, 1910.—Mary Merrill Franklin was born at Melrose, Mass., on December 18.—Mathesius reports the birth of a second daughter in February of this year.—George

Eagar writes of two children since the last record book was issued. George Darby Eagar is three years old and Geraldine is one. This makes four for Eagar, which gives him a seat in the front row of "Our Proud and Happy Fathers."—Clifford B. Clapp reports from Hanover, N.H., where he is now located in the Dartmouth College library, the arrival of a son, Richard Gardner Clapp, upon March 3.—Fitzgerald reports from Albany, N.Y., the birth of a daughter on November 9, last. Fitzgerald was transferred from Boston to Albany about a year ago by the Boston & Albany Railroad, but is still in the Signal Department. His house address is 406 Clinton Avenue, Albany.—Desloge reports a son, Firmin, now fifteen months old. The young man, so his father states, is already entered for Tech in the class of '32.—Vaughan's address is 72 West Street, Worcester, Mass.—Cummins writes from Redding, Cal., that he is going abroad this spring to examine a mining property on the southern coast of Wales.—Steever's address is care Congdon & Steever, 51 Board of Trade, Chicago. He was married last July, in Denver.—May is manager of the General Bakelite Company, 100 William Street, New York. He has sent the secretary a pamphlet about Bakelite, which will be turned over to any Course X. man applying for it. It is too deep for a Course IV. man.—L. E. Williams is in the Cleveland office of the Great Lakes Dredge & Docks Co., 1630 Williamson Building.—Paul Weeks has opened an office as a consulting engineer in Los Angeles, Cal. His address is 217 Mariposa Avenue and his residence is Needles, Cal.—McBurney is with A. W. Buel, 15 William Street, New York, as a consulting engineer. His residence is 38 East 31st Street, New York. Previous to taking this position McBurney was for two years Assistant Engineer in the bridge department of the New York, New Haven & Hartford Railroad, at New Haven, Conn.—John B. Turner is a contracting engineer at 533 Pierce Building, St. Louis, Mo.—Ewart is city engineer of Aberdeen, Wash.—Gardner Rogers reports from Houghton, Mich., that he finds the climate there in winter as vigorous as it is delightful in summer. He has an average snowfall of seventeen feet to dispose of in keeping the Houghton County Traction Company moving. He says that everybody uses snow shoes and that his older boy, now three, is quite an expert in this line.—Eagar is in the industrial control department of the General Electric Company at Schenectady. He still keeps up his military interest and is Second Duty Sergeant of Company E, Second Regiment, New York National Guard. He was recently stage manager for the eleventh annual performance of the "Jest and Song Club."—Fruit reports that since the burning of the Milwaukee plant of the American Bridge Company, last year, he has been attached to the contracting department. He has spent the winter in New Orleans and can be reached there in care of the American Bridge Company, 1030 Maison Blanche.—We

hear that Pond is at 2A Calle Barcelona 24, Mexico City. Like the other classmates in Mexico he seems to be too busy at present to write.—In the recent concentration of forces toward the Mexican border, Captain Wadleigh left the Boston Navy Yard in charge of a detachment of marines. We understand that he was moved to Guantanamo, Cuba.—Matthies, is now doing engineering work for the European department of the Western Electric Company. His headquarters are, care Bell Telephone Company, 18 Rue Bonderwyns, Antwerp, Belgium.—The Underwriters Bureau of New England has moved to 141 Milk Street, Boston. This makes a new address for Robinson and Jimmy Smith.—The following addresses have reached the secretary and though not verified by him are doubtless correct: Grant, Pittsburg Flood Commission, 1804 Arrott Building, Pittsburg, Pa.—Randall, First National Bank Building, Houston, Texas.—Wright, United States Bureau of Mines, 40th and Butler Streets, Pittsburg, Pa.—Swan, care W. H. McElwain Company, 348 Congress Street, Boston.—Seabury, 135 South Broadway, White Plains, N.Y.—Archie Gardner, Estacada, Ore.—Lawson, Pearlless Dwellings, Wilkesburg, Pa.—A. T. Nelson, Henry Building, Seattle, Wash., care Trussed Concrete Steel Co.—Redfield, 332 South 13th Street, Philadelphia, Pa.—Warren C. Taylor, Union College, Schenectady, N.Y.

The engagement is announced of Dr. William J. Mixer to Miss Dorothy Fay, daughter of Mr. and Mrs. Henry H. Fay of Boston. Doctor Mixer is the son of Dr. and Mrs. Charles J. Mixer of Boston, and after his graduation from Technology he attended the Harvard Medical School from which he was graduated in 1906. He is a member of the Tennis and Racquet and the St. Botolph Clubs.

1903.

F. A. OLMSTED, *Sec.*, Oregon City, Ore.

R. H. NUTTER, *Asst. Sec.*, Lynn, Mass.

The class was represented at the dinner of the Alumni Association January 4, by Swett, Gleason, Eustis, Stiles, Bartlett, Clark, Gould, Fischer and Denham.—On January 28 a very enjoyable class dinner was held at the Tech Union. The class was fortunate in having for its guest that evening Professor Jaggar, who gave a most interesting talk, illustrated by lantern slides, on volcanoes and a Volcanic Experiment Station to be established at Hawaii by the Massachusetts Institute of Technology. The dinner was attended by the following men: Atwood, Aldrich, Gilker, Capelle, Haddock, Comer, Avery, Loughlin, Swett, Ricker, King, Clark, Nutter, Eustis, Sears, Jackson and Merrill.—The following new addresses have been sent in: C. H. Porter is now with

W. H. McElwain Company, 348 Congress Street, Boston; residence, 407 Riverbank Court, Cambridge.—H. H. Fales is with the American Felt Company, 246 Summer Street, Boston.—L. W. Adams' address is South Bethlehem, Pa., care of Bethlehem Steel Company.—G. M. Harris as secretary and treasurer of the Worumbo Company (handling woolen fabrics) may now be found at 334 Fourth Avenue, New York.—P. R. Parker is with The Yuba Construction Company, 1224 Alaska Building, Seattle, Wash.—Newman is at Riverside, Cal., as construction superintendent of the Riverside Portland Cement Company.—R. F. Manahan is at Minas Tecolotes y Anexas, Santa Barbara, Chih, Mex.—E. H. Millard has charge of the erection of a 3,000,000-cubic-foot gas holder at St. Paul, Minn., for the Riter-Conley Manufacturing Company.—H. Crosby writes from New York as follows:

On February 16 we had an informal class dinner at the Technology Club, the first we have had since Morse was with us in September. From the small attendance it would seem that nearly all the fifty '03 men in New York and vicinity were married and had become "stay-at-homes." Bryan, Crosby, MacDonald, Scofield and Scudder were present. MacDonald came all the way from Bridgeport to attend. What we lacked in numbers we made up in enthusiasm. After a good dinner, well served, we adjourned to the pool table and kept the room merry with laughter all the evening. In attendance to our '03 dinners Course XIII. has easily taken first place, over 50 per cent. of the men at each meeting being members of that course. If all goes well I shall sail for Panama with the American Society of Civil Engineers on March 2. There is a possibility that I may extend this trip to take in Mexico City, Oaxaca and other points of interest to the south of us.

—W. H. Adams writes from Tientsin, China:

I am still at the same place and enjoying my work here very much. My contract is up next July, but I have been asked to renew it on an increased salary. I expect to be here for another three years, but may be home in the summer of 1913, although it will be too late for the ten-year reunion. I have installed an electric lighting plant, testing laboratory, heating system and the pumps and distribution system for our water plant. Now I have entire charge of all those in addition to my regular teaching work. Last summer Mrs. Adams and myself spent six weeks in the interior of Korea, visiting Mukden and the Great Wall of China on the way. We traveled over scenes of the Russo-Japanese War, except Port Arthur, which we hope to visit next summer. I hope to get to Manila to look up Hayden some time, but my vacation comes the wrong time of the year for such a trip.

—Riddell writes from East Helena, Mont.:

There is little to add in my case to the account in the '03 Book, except that in June of last year Philip Mosman, Tech '87, was transferred to the New York office of the American Sugar & Refining Co., and I fell heir to his position as superintendent of the East Helena plant.

From R. W. Eaton it was learned that F. B. Crosby was injured at Hoosac Tunnel the latter part of February. While working on

the electrification of the tunnel he was struck by a work train. The latest report indicates that he is getting on finely. Crosby writes as follows from his home at Woodsville, N.H.: "I had a very close call indeed, but was very fortunate both in the relatively slight injuries received and in my rapid recovery. The principal damage was a bad fracture of the right leg between knee and ankle. The doctor allowed me to be removed from the hospital to my home in New Hampshire, but I am writing in bed and will probably be tied up pretty closely for another five or six weeks. Eventually, I have every assurance of coming out all right."—The engagement is announced of Miss Frances Gilmore Greene of Lynn, Mass., to R. H. Nutter.

1904.

EVERETT O. HILLER, *Sec.*, care of Pneumatic Scale Corporation, Ltd., Norfolk Downs, Mass.

ADDISON F. HOLMES, *Asst. Sec.*, Mass. Inst. of Tech., Boston, Mass.

On the evening of January 31, a class dinner was held at the Boston City Club. Interference with other functions such as the dinner of the Engineers Club of Boston prevented an attendance as large as was expected. The dinner was chiefly given over to discussion of plans for what is now our annual outing in June. Stevens and Haley contributed numerous characteristic stories of experiences in handling electrical linemen who seem to be industrial gypsies, with as little stability as the roving bands which we still find throughout the country. It was the sense of this meeting and seems to be generally agreed that we should put special emphasis on this June outing, making it the banner event of the year and one to which men even considerable distance away may come feeling that a special effort is warranted by the good time to be had. A letter from Haynes is here quoted, he having taken up the plans for the June event as chairman of the committee:

In response to your letter of sometime ago, I would say that the committee in charge of the outing (composed of Mert Emerson and Tammy Rockwood and I) has gotten together and decided that some country club near Boston will be a good place to go and that, all things considered, the best time would be June 23-25. The plan thus far is to have a little dinner together in Boston Friday evening the 23d and take a train after it for the club, where we would have all day Saturday and up to the middle of the afternoon Sunday. There will be ample provision made for all kinds of sports on both days, and the expense will not be heavy, a ten dollar bill should cover it easily without stretching. The committee earnestly hopes that those who were prevented from participating in last year's good time owing to a conflict of engagements around the 17th of June, will be able to come this year as this is a week later. We feel pretty sure that those who came last year will be on hand again, and in some way we have got to impress it on the rest of the bunch around eastern Massachusetts that this is an affair that they cannot afford to miss.

—There will be a great gathering of '04 men at the smoker and banquet April 10 and 11. Indications are that the number coming back will crowd the figures of the 1909 reunion—Throughout the winter a consistent canvass of the class has been made by Holmes in order to bring the finances of the class to their proper state. Each man has been asked to bring his dues up to date, with very gratifying results. With the loyal financial response has come a general show of interest and class loyalty. Many men, particularly among those far away from Boston, have fixed their minds on attending the next five year reunion, showing that our ten-year anniversary is something to anticipate even now.—The interests of the Sullivan Machinery Company in the Northwest have been put in charge of Austin Y. Hoy, '04, with headquarters in the Hutton Building, Spokane, Wash. The position is one of considerable responsibility as the territory includes not only the northwestern states but the western Canadian provinces.—Don Galusha writes:

I am going to leave for Minneapolis within a day or two and shall be gone for the larger part of the year. Their power station burned up awhile back and we are elected to get it going again, or rather a new one, by the first of next October. There are a few substations and some underground work so there will be little time for fishing.

—We have a report of a very pleasant social function in Newton with Phil Sweetser as principal actor together with his fiancée, Miss Helen Pratt. The event was a tin shower in anticipation of a future domestic establishment, though Phil has not yet told us when he is going to do the trick.—In a letter Stevens says: "The following from the *Sunday Globe* of January 1, 1911, is the most important item of interest concerning myself which I know of: 'Mr. and Mrs. Frank H. Rice of Allston announce the engagement of their daughter, Marion Dana Rice, to Henry Warren Stevens, M. I. T., '04, son of Mr. and Mrs. Stevens of Gardner, Mass.'"—Charlie Barrett held forth at the Boston Automobile show. He is with the Knox Automobile Company, Springfield, Mass. He had the automobile bug as a student, and has never been cured. His better half was with him and everything seemed to be coming his way.—The following letter from F. K. Merriman, Course I., is in reply to a direct appeal reminding him that one's own personal experiences often seem too unimportant to be told, while as a matter of fact they hold much interest for others who have not had the same opportunities of seeing life in various places. It is the kind of letter that helps make the class news column instructive and interesting along general as well as personal lines. The secretary believes that others of the class will follow Merri-man's lead.

I have your recent letter. The reason I haven't written before is, as you stated, constant association with things in other countries has made them appear uninteresting and at times a bore. The panic of '97 hit me just as we finished a fine piece of work in Florida, a job that was a real pleasure to work on. I didn't see much ahead in the state and the wanderlust struck me so I tied up with J. G. White & Co., Inc., of New York and was sent to the Philippines,—went out over the Canadian Pacific to Vancouver. This in itself was an interesting trip. Sailed from Vancouver August 22, 1907, in *Yokohama*. Did this port and took a trip up to Tokio while waiting for steamer to discharge cargo. Laid over a week, or ten days, at Kōle and took in considerable around there. The trip through the Inland Sea of Japan was superb on a moonlight night and it looked exceptionally good to me, as at that time I was "courting" the present Mrs. Merriman. In fact I was pretty busy those days. At Nagasaki one has an opportunity of studying one of the greatest sights in the world from a labor point of view. I refer to the coaling of the ships by the native men, women, and children. The lighters or barges of coal are swung alongside as soon as the anchor is dropped, scaffolding of bamboo is erected in a very short time, the older people and children put the coal in small baskets; girls and women stand on the scaffolding which is erected in sort of ladder. The coal, in the small baskets, is passed up from one to another until it is finally thrown out of the basket into the large coal storage bins where it is packed away by the more able-bodied men. The empty baskets are thrown down onto the barge by a boy who stands at the top of the ladder. The upward movement of the baskets resembles a coal conveyor. The women are the machine. If one drops a basket one does not have time to pick it up again. That would delay every one below the one who dropped the basket and there are always more baskets "a coming." The best part of it all is the good nature of the laborers. All are smiling, laughing, or talking. These people can put more coal in a steamer than any machine, and are excelled only by the natives at Port Said who handle the coal in a different manner. We had a day at Shanghai which is a modern cosmopolitan city. At Hong Kong, the British stronghold of the Orient, one comes in contact with the representatives of a nation which understands governing the dark tribes, and which thoroughly understands how to live and enjoy life in the tropics. Those of you who anticipate I am going to say Americans are to be sadly disappointed. Americans do not live in the tropics. They exist. They have not learned through long years of experience that the New York hustle can not be carried on successfully year after year in the tropics. The Britisher has. If any one does not believe this let him look upon the sturdy Britons at Hong Kong. Their short working hours, football, cricket, polo, tennis, etc., signify that a white man can live in the tropics provided he lives right. Fortunately, I did not encounter a typhoon between Hong Kong and Manila. The China Sea is noted for them and as I have been in the tail end of two or three I have no desire to see one closer. My stay in Manila was short. It is an up-to-date city and the headquarters of the government. I first went to Chi and was there eight months. The company built sixty miles of railroad on Chi Island. Three feet, six inch gage, everything being first class, reinforced concrete culverts, bridge abutments and piers, steel spans, in fact everything of a permanent nature. All the station buildings and shops were of reinforced concrete construction. The railroad ties were of hardwood and the spike holes were bored before ties left the terminal yard.

From Chi I was transferred to Iloilo, Panay Island, and filled various positions from assistant engineer to engineer of bridges and chief draftsman. The work on the island was similar to that on Chi, although the rainy season and an insufficient labor market hindered the work to some extent. I enjoyed the work on this island although during the latter part of it I was rather "all in" due to the continued heat. The climate in Uncle Sam's possessions in the Far East is very good, considering they are in the tropics. The nights were always cool, that is, temperature about 80° F. The one redeeming feature is the good breeze from either the southwest—rainy season—or northeast,—dry season. When the monsoon is changing from one to the other then it is rather trying. The rainy season varies in different islands. The natives in the Visayan district are peaceable but it is a question in my mind as to whether or not they will ever reach a real state of civilization, become industrious

and capable of self-government. I believe I am inclined to be an Englishman in this respect, and "wait and see." I should advise those who anticipate going to the islands, to first read a book by Stanley Portal Hyatt entitled "The Little Brown Brother," and think twice. When one has been through two epidemics of cholera, in danger of smallpox and leprosy constantly then one realizes the good old United States is God's country. There are some fine positions in the government service in the islands, and there are many where one is practically confined to sun-dried fish and rice for food. Chon, it is called over there. I don't know as I am any worse off for the experience, but that is no reason why others should jump at the chance to go. I sometimes wish I had done as Stetson did. Get in one job and stick there. I have knocked all the way around and willing to settle down. We left about the middle of January and came home via Europe stopping at Singapore, Penauy, Columbo, Bombay, Aden, Port Said, Marseilles, then through France, and England. While at Frankfort I purchased a set of Otto Richter's drafting instruments that I could not duplicate in the States for five times what I paid for them. Have been trying the teaching profession since last fall and found myself rather rusty on theory. However, I like the work very well.

—From Bixby we have the following short word:

It is hard to realize that some of the fellows have so little chance to meet the old associates. Was very glad to see Arthur Bee and family the other day. First '04 man I have seen in five years.

—Lee Phillips writes from Johnstown, Pa.

Regarding myself there is nothing of particular interest. I am Pittsburg salesman for the National Radiator Company, besides covering most of the surrounding territory for seventy miles. I am married and have a couple of little daughters. Occasionally—whenever there is one, I attend any Tech Smoker that the men hold in this neck of the woods. One '04 I can always count on seeing is A. D. Smith, who is running an independent oil refinery at Coropolis. He has a nice wife and couple of fine boys. F. M. Pierce I also see occasionally. He is a draughtsman with the Pennsylvania Bridge Company at Beaver Falls. He is also a married man with a son. Several times in the last few years I have run across Woods, who is down in Steubenville, Ohio, with the La Belle Iron Works.

—It has just come to the secretary's notice that last fall W. N. Todd was married to Mary Helen Bird at Belfast, Me. They are living at 222 Eastern Promenade, Portland, Me. Congratulations are offered none the less sincere for being tardy.—Harrison A. Whitney writes from Portland, Ore. He remarks that class news seems to have been scarce in the REVIEW and immediately continues "I don't believe I have written for several years." It is all right Whitney if all were interested to make such a criticism and follow with a letter as you did the cause would be removed. He continues:—"We have a little girl two years old. Am doing well in a business way being a junior member of the firm of Whidden & Lewis, both old Tech men by the way. I am a member of the Commercial and Arlington Clubs and have just received notice of my election as associate member of the American Society of Civil Engineers. There is a large number of Tech men here and

we have a dinner now and then and talk over old times. Have not been East since coming out here in '04, but am going to be at next reunion if possible."—Carl King writes from 418 Main Street, East Haven, Conn., telling of a husky son and a new arrival, a girl, and assuring us that there is nothing that will take their places. He states that though he likes it there he hopes to be able to return to Boston when he has amassed his little pile.—The following from Herman R. Simmons rings true and is the kind of spirit we hope to see develop in '04. "We have been so rushed with the additions to the mills (Lorraine Manufacturing Company, Pawtucket, R.I.), that outside interests have been neglected. Sometime I trust that I may be able to take more active part in the class affairs."—Concerning class business, we have a letter from E. R. Adams. He is superintendent of the Velardena Unit, American Smelter Company, Velardena, Durango, Mexico.—We have sad news from Fred Farrell, who is with the Emerson Laboratory, Springfield, Mass. His letter herewith tells the story best:

After three years of great suffering and pain my brother, Frank S., died at Brookfield, Mass., on Friday last, February 24. He was married on Wednesday, the 22d, to Helen Louis Wales of Stoughton, Mass., to whom he had been engaged for a number of years. She is a brave, wonderful girl and full worthy to enter among the sisters of our class. My brother was cheerful and happy to the last and had many messages and tokens of his love for many he knew. During his illness he read and mastered by the aid of a wonderfully retentive memory over a thousand volumes of history and biography, particularly along lines of political history and with special reference to American history. My brother was listed, I believe, as an '05 man but he belongs in '04 as we both went to the Institute together; he, however, received his degree in '05 as he finished his thesis in the summer of 1904."

—The secretary has written to Mrs. Farrell and to Fred offering the sincerest sympathy of the class and remarking on the esteem in which we have always held the one who has left them so early in life.—The following changes in mail addresses of '04 men have been noted: Edwin F. Allbright, care of Adams-Pond Company, Boston, Mass.—P.M. Arnold, 90 West Street, New York, N.Y.—James M. F. Baker, care of Cram Goodhue & Ferguson, 170 Fifth Avenue, New York, N.Y.—Calvin P. Bascom, 3737 Delmar Boulevard, St. Louis, Mo.—Albert W. Bee, Jr., 6629 Wentworth Avenue, Chicago, Ill.—William L. Bently, P.O. Box 801, Dallas, Tex.—Frederic A. Biggi, New York State Highway Commission, Division Engineer's Office, Albany, N.Y.—Bernard Blum, Union Depot, Duluth, Minn.—Stephen L. Bradley, Sandwich, Mass.—George W. Briggs, 88 Winthrop Street, Taunton, Mass.—Moses Brown, Jr., care of American Sugar and Refining Co., Santa Eulalia, Chihuahua, Mex.—C. C. Carhart, P.O. Box 411, Gooding, Idaho.—Francis J. Carty, 322 South Station, Boston, Mass.—L.C. Clark, Jr., 264 Green Street, Cambridge, Mass.—Harry H. Cerf, care of Y. M. C. A., Duluth, Minn.—E. L. Clifford, 1720 Railway

Exchange, Chicago, Ill.—B. H. Clingerman, care of Mobile Electric Company, Mobile, Ala.—George A. Curtis, Massachusetts Highway Commission, 34 Boylston Street, Pittsfield, Mass.—Arthur C. Downes, care of National Carbon Company, Fostoria, Ohio.—Clifton C. Easterbrook, 85 Whitney Place, Buffalo, N.Y.—Robert Faulkner, 326 North 10th Street, Lebanon, Pa.—Assistant Naval Constructor William B. Ferguson, Jr., Navy Yard, Boston, Mass.—Halsey French, 165 Broadway, Room 725, New York, N.Y.—George R. Gaenslem, 403 St. Anthony Avenue, San Antonio, Texas.—J. A. Haraden, 115 Glenwood Boulevard, Schenectady, N.Y.—George B. Harrington, care of Seattle Electric Company, Seattle, Wash.—R. Hazeltine, Wheeling Corrugating Company, Wheeling, W. Va.—Andrew H. Hephern, 8 Park Drive, Brookline, Mass.—William E. Hodge, Lo Prospect Terrace, Springfield, Mass.—Prof. Elmer A. Holbrook, Nova Scotia Technical College, Halifax, Nova Scotia.—Frederick W. Horton, care of United States Bureau of Mines, Pittsburg, Pa.—Cyrus P. Howes, Missouri Pacific Railway Company, care of Bridge Engineer, St. Louis, Mo.—Austin Y. Hoy, 717 Hutton Block, Spokane, Wash.—Charles W. Hoy, New Jersey Gas Company, Glassboro, N.J.—Alfred H. Jacobs, 110 Sutter Street, San Francisco, Cal.—George K. Kaiser, 76 Park Avenue, East Orange, N.J.—William H. Koppelman, Cornettsville, Ky.—Waldemar R. Kremer, Vilter Manufacturing Company, Milwaukee, Wis.—Currier Lang, The Solvay Process Company, Detroit, Mich.—J. Lawrence Lyon, 320 High Street, Pawtucket, R.I.—M. G. Magnuson, 1766 Girard Avenue, South Minneapolis, Minn.—M. Edgar Mason, 1030 North Branch Street, Chicago, Ill.—Ambrose M. Merrill, 340 77th Street, Brooklyn, N.Y.—E. Harris Metcalf, Center Sandwich, N.H.—Robert M. Morse, 17 Battery Place, New York, N.Y.—Clarence A. Neal, 903 Sharp Building, Kansas City, Mo.—Rolf R. Newman, 607 Park View Avenue, Los Angeles, Cal.—Frederic Nickerson, Crocker Building, San Francisco, Cal.—Eliot W. Niles, Maplewood, N.J.—H. F. Noyes, Princess Furnace Company, Glen Wilton, Va.—R. B. Pendergast, 48 Beacon Street, Boston, Mass.—Rowland G. Rice, 192 Summer Street, Stamford, Conn.—Prof. H. K. Richardson, Pennsylvania State College, State College, Pa.—John R. Sanborn, Artistic Metal Construction Company, Jamestown, N.Y.—Waldron P. Schumacher, Minas Tecolotes Y. Anexas, Santa Barbara, Chihuahua, Mex.—Melvin H. Schwartz, 50 N. Sacramento Boulevard, Chicago, Ill.—Edgar F. Smith, 165 Broadway, Room 725, New York, N.Y.—David Sutton, 81 Bushnell Street, Dorchester, Mass.—Grant S. Taylor, 117 Remsen Street, Brooklyn, N.Y.—R. E. Lee Taylor, 633 Law Building, Norfolk, Va.—Herman E. Thompson, Box 506, Manchester, N.H.—O. G. Thurlow, Tennessee Coal, Iron & Railroad Company, Birmingham, Ala.—Fremont N. Turgeon, Witherbee Sherman & Co., Mineville, N.Y.—Reginald A. Wentworth, 4

Walnut Street, Southbridge, Mass.—Ralph B. Williams, care of Miami Copper Company, P.O. Box 100, Miami, Ariz.—Emery J. Wilson, 10917 Ashbury Avenue, N.E., Cleveland, Ohio.—Lewis G. Wilson, Department of Buildings, City Hall, Kansas City, Mo.—Wilbur Wilson, 520 W. 122d Street, New York, N.Y.

1905.

GROSVENOR D.W. MARCY, *Sec.* 246 Summer Street, Boston, Mass.

Roy Allen writes from Parral, Mexico:

Nothing happens here but work, and that is not of interest to the outsider. When subjects for conversation fail, we talk about the revolution. Last week Velardena, where Gene Burton is, and the smelter where we send part of our ore, were raided by the "rebels" and a forced collection taken of horses, arms, ammunition and money. No indignities were offered the Americans, though some of them were *cordially* (?) invited to help the "cause." Since the raid, bridges have been burned this side of the smelter, cutting the people there off from communication with the outside world, and leaving us with the prospect of a (at the present) valueless pile of ore on hand.

We have had no direct communication with El Paso for three weeks. Revolutionists are actively engaged within less than fifty miles both north and west of us. They have been the cause of sending a considerable number of wounded soldiers to Parral within the last few days, and to-day brought the news of some very successful holdups of ranchers and storekeepers directly to the north of us.

The trouble seems to be spreading, and the government is having a harder job than it anticipated. We have not been troubled, but we do dislike being shut off from home news for a week at a time. Besides, we are interested to learn how the campaign for \$100,000 a year for Tech comes out.

—Victor Paquet wrote from Bath, Me., on December 17: "A seven and a half pound son arrived this morning, and has been named Victor Hugo Paquet, Jr. Both mother and boy are doing well."

—Harry Wentworth announces the birth of Nathan Henry Wentworth, on January 5, weighing nine and a half pounds.—The secretary has a similar announcement to make. Richard Carter Marcy was born on January 15, and expects to be M. I. T. about '33.—E. L. Hill, for the past few years assistant district engineer of the American Steel & Wire Co., has recently been appointed assistant superintendent of that company's electrical cable works in Worcester.—C. R. Adams had an article in the *Engineering News* for February 2, on "Stream Gauging During the Frozen Season; an Outline of the Difficulties, and a Description of Three Methods Applicable to Different Conditions." The article was reviewed at some length in the *Engineering Magazine* for March.—Bob Lord is convalescing after an attack of pneumonia, and early in March went to the Bermudas with Phil Hinkley.—'05 men have been turning out in good style at the informal lunches held by the "Last Ten Classes" at the American House Rathskeller, on each Friday at 12.30, and except

on two occasions have led the other classes in point of numbers. Men in town on Fridays should remember this, for they will surely find someone they know there.—Roger Stebbins writes from Liberty, N.Y., February 20, as follows:

I have just received word of the death of our classmate Russell B. Simons, which occurred on February 7 at his home in Greenfield, and thought that possibly you might not have heard of it. He entered the Institute with '04, but lost a year through sickness, and took his degree with '05, Course XIII. He has been sick with tuberculosis for a couple of years, having left work at the Fore River Ship-building Company, in June, 1909, to go to Saranac, N.Y. I have heard from him from time to time since then, and although he never said much about his condition, I gathered that he had only slight hope of recovery. I have had a year's experience now with the same disease, but am happy to say that I am well on the road to recovery, and expect to return to work this spring. Simons' mother's name is Mrs. Henry N. Simons, 12 High Street, Greenfield, Mass. Give my regards to any of the fellows you may meet, and tell them that I expect to see them again before long.

—The secretary also had a note from C. E. Smart, who lives in Greenfield, regarding Simons, and saw several newspaper items about his death, all speaking of the esteem in which he was held in his home town, at the Institute, in his work, and finally at Saranac, where his cheerfulness despite his condition, won him many friends. The newspaper clipping following is all the information the secretary has yet received concerning the death of another of our classmates:

Springfield, Mass., February 25.—The death of Frank S. Farrell, a graduate of the Massachusetts Institute of Technology, and practical chemist of wide reputation in Brookfield, reveals an unusual romance, as his marriage became known simultaneously. For six years Mr. Farrell has suffered from an incurable disease of the spine. In full knowledge that Mr. Farrell was very low, Miss Louise Wales of Stoughton became his bride on Wednesday, the 22d.

1906.

RALPH R. PATCH, *Sec.*, 15 Lincoln Street, Stoneham, Mass.

Terrell Bartlett, of Bartlett & Ranney, San Antonio, Tex., was married on November 3, 1910, to Miss Elizabeth Cassin of San Antonio. Willis G. Waldo came up from Brownsville to assist Ranney in seeing Bartlett safely across the line. A delightful reception at the home of the bride followed the ceremony. Mr. and Mrs. Bartlett will reside for the present in San Antonio.

Another successful 1906 informal dinner transpired on March 11th. There were present during the festivities: Keleher, Banash, Blackwell, Littig, Donovan, Howard, Kendall, Hemphill, Hinckley, and a friend of Keleher's, Mr. Martins, of Rio Grande del Sur, Brazil, a civil engineer. During the dinner Mr. Martins favored the gathering with a brilliant address (in Portuguese)

which was rather freely interpreted by Keleher. The speaker was elected an honorary member of the class of 1906. There were other speakers of the evening—especially brother Donovan—but the readers of THE REVIEW are spared. The inevitable pool game wound up the festivities.

The following item from the *Boston Transcript* will be of interest to the class: "James M. Buchanan of Trenton, the youngest son of the state librarian, Henry C. Buchanan of New Jersey, and Miss Kate Williams of New Bedford will be married Saturday evening in that Massachusetts city. Mr. Buchanan is a graduate of Princeton University and the Massachusetts Institute of Technology. He is an electrical engineer connected with the New York & New Jersey Telephone Company.

Notices for a 1906 dinner were sent to the 135 men living within 50 miles of Boston. The responses did not reflect remarkable enthusiasm. Considerable supplementary telephoning resulted in a return of 69 replies, nine of these said "Yes," sixty said "No." Six men forgot to sign their cards. On Friday evening February 10, ten loyal '06 men gathered at Louis' Café and we surely spent a pleasant evening. Course VI. made a great showing, claiming 70 per cent. of the attendance, namely Batchelder, Clark, Karson, Kidder, Sherman, Wetterer. The others present, Hobson (I.), Kerr (VII.), and Patch (XI.). It wasn't family cares that made the small attendance as the married men were there in force. The menu was tempting, though Kidder claimed he had eaten better sparrows. Wetterer reported for the committee on five-year book that if 250 books were issued and the secretary did considerable work the cost could be held at about \$1.00 per copy. The opinion was that the book should not be started until we had on deposit checks from enough men to guarantee the success of the book as they believed the class as a whole does not care for this book now. A suggestion was made that the 1906 men get together somewhere in the woods for two or three days at the time of June festivities but no action was taken. The program then developed into a contest of high class story telling. In this, the laurel was voted to Hobson, with Sherman and Wetterer close seconds. No changes of addresses nor notes of interest have been received from individuals since the last REVIEW so we conclude that everybody is very busy, where they were then.

1907.

BRYANT NICHOLS, *Sec.*, 143 Garland Street, Everett, Mass.
W. W. BIGELOW, *Res. Sec.*, 274 Lexington Street, Waltham, Mass.

Charles E. Baker was married at Newton Highlands, Mass., on May 6, 1910.—Carl Brewer of Ironwood, Mich., is engaged to Miss Mabel Willcox Mason of Gladstone, Mich., and expects

be married during the summer.—Ralph Crosby has been a father for some time; Evelyn Fanny Crosby was born on May 8, 1910. Crosby is living in Wakefield, Mass., now.—L. A. Dickinson is engaged to Miss Judith A. Erikson of Boston.—E. W. James was married March 4, 1907, and has a daughter born in Manila, P.I., on December 31, 1907.—G. R. Jones was married on November 24, 1910.—A. G. Labbé was married on November 30, 1910, to Miss Loomis of Tacoma, Wash.—September 20, 1910, George D. Luther was married to Miss Charlena Freeman of Amherst, N.S., at Denver, Col.—February 11 the Boston bunch of '07 men held a small dinner at the Technology Club. Only thirteen men were present, including our honorary member, Bursar Rand. Bigelow, Crosby, Dickinson, Kimball, Macomber, Mahar, Moody, Norton, E. P. Noyes, Taylor, Wells and Wonson were the other twelve. Wonson gave a talk on shoe manufacturing from a Tech man's point of view, and explained why so many of the '07 boys were attracted to it, all of which was very interesting. Then Norton explained the life and experiences that Uncle Sam offers to his officers in the Coast Artillery Corps. Then the Bursar spoke on the Institute's plans for the future.—Sam Marx is making a name for himself in architecture. He won a competition for a \$250,000 art museum for New Orleans, and is building four large residences, two apartment houses, two factories and has other contracts.—William D. Milne was married on October 1, 1910, to Miss Lorna W. McLean of Connecticut.—Bryant Nichols, has in training a member of the class of 1932, M. I. T. He has a son, Bartlett Fogg Nichols, born January 27, 1911.—S. E. Rockwell was married on January 25, 1911, to Miss Bertha M. Schoenherr, at Ashmont, Mass.—O. H. Starkweather is now in Needham, Mass. He has two children, one born in June, 1908, and the other on November 1, 1910.—H. A. Sullwold is in the same class. He was married November 16, 1908. His first child, Gretchen, was born August 7, 1909, and on February 14, 1911, a boy, John, arrived at his home.—E. S. Wires was married on June 22, 1909. He has one child, born April 2, 1910, by name Barbara Mead Wires.—R. G. Woodbridge is engaged to Miss Ethel Lytle Chandler of Newton Center, Mass.

I.

On the Part of the Secretaries

It is with extreme regret that we announce the death on January 16th of Warren Stearns Baker, '08, at Saranac Lake, N.Y. He was forced to leave the Institute after his second year on account of failing health, which he never fully regained, his death resulting from tuberculosis. He was an associate member of the Alumni Association and was always very much interested in class affairs, but seldom appeared at class gatherings on account of his condition.

The results from the circular letters sent out in January have been quite gratifying, both as to the number of replies and the consequent fund of information about members of the class, and as to the payment of the class dues. About 120 of the fellows have sent in their "Reply Sheets," and dues have accompanied them in nearly every case. Several of these responses have been from men who have not been heard from for two or three years, and the secretaries were particularly glad to hear from them, and to pass along their greetings and experiences through the medium of the following pages. But what about the remaining 200 odd to whom letters were sent at the same time? You, reader, if you have an '07 "Reply Sheet" tucked away in some corner of your desk, *dig it out* now while you read, then *fill it out*, enclose the \$1.00, and *send it out* to the home of the secretary. The news and the letters in the following pages have been gleaned for the most part from these replies. The secretaries feel that whatever hard work and often monotonous effort they put into the preparation and mailing of these letters is amply rewarded when they can publish a bunch of class notes like this. In the July number last year, a list of "Married Men and Class Babies" appeared in the '07 notes. In the July number coming, a similar list will appear, for there have been so many additions to both items of this heading that the old list is ancient history. If your name belongs in such a tabulation, be sure that the secretary has the facts in the case by June 10. To close our brief message, don't forget that June is near at hand, and with it comes Technology reunion and celebration. Plan your business if possible so that you can be in Boston on June 6, which is graduation day, and which brings '07 reunion and Tech night at the "Pops." If you can tell the secretary the addresses of any of the following, please write to him: F. O. Adams, J. B. Harlow, O. W. Potter, F. T. Moses.

II.

Miscellaneous Notes About '07 Men all Over the World

P. L. Adams is still working for the Public Service Railway Company. He has just completed five month's work in the Marion power station which supplies practically all the power for railways and lighting in northern New Jersey. He is located in the shops and finds the work interesting. His address is still 88 Sherman Avenue, Newark, N.J.—Charlie Allen is in the upper leather end of the shoe business in Spencer, Mass. "Interesting, good variety, plenty of chance for originality, worth while, long hours, fairly hard work, I like it." Thus he describes it, and says he has gained ten pounds since September 10, 1910 (his wedding day).—Jim Alvey is resident engineer for the Arnold Company of Chicago on the construction of the Evansville, Indiana, plant of the Bucyrus

Vulcan Steam Shovel Company.—Henry Alvord writes from Brunswick, Me., where he is instructor in the department of surveying and drawing, saying there is little new, but that there is a nice bunch of fellows there, and he is enjoying life.—F. W. Amadon is assistant engineer with the New York, New Haven & Hartford Railroad, and for the past year has been making estimates on the costs of car-barns, working up ground plans, and supervising the construction of barns in some of the larger cities in Connecticut. Some of these barns contain over a mile of track under cover, and accommodate 115 45-foot electric cars.—Charles E. Baker, Jr., is superintendent on outside work for the Eastern Dredging Company of Boston. He has had charge of a ledge removal job in the Penobscot River for the last two years and expects to be there another year. He is in the Boston office during December, January and February.—Jim Barker is in the architect's office of the Canadian Pacific Railroad at Montreal. He is designing steel and reinforced concrete for hotel and station structures.—John G. Barry is in Jacala, Hidalgo, Mex., as engineer, doing considerable geological work, with the Cortez Associated Mines. He is "in the heart of Mexico, with a fine climate, at an elevation of 4,000 feet, with native companions of Otomene Indians. Principal avocation is trying to think in Spanish, and make a native understand the value of precise measurements."—C. W. Beam is in the Maintenance of Way Department with the New York Central & Hudson River Company at Watertown, N.Y.—Walter Bigelow is still with J. R. Worcester Company at Waltham, Mass. He and Gilbert Small attended a meeting of the American Society of Civil Engineers in New York in January. While there, on a trip to the Bethlehem Steel Company, they met Mr. and Mrs. R. W. Parlin, both '07, also H. P. Farrington, '07.—C. R. Bragdon is in charge of the laboratory of the Glidden Varnish Company of Cleveland, Ohio, and is trying to find some way to improve "Jap-a-lac." He says he is planning to come to the 1912 reunion. We recommend this course to all '07-ites. Be on hand at our wooden reunion, and plan for it now.—Carl Brewer is mining engineer for the Cleveland-Cliffs Iron Company, Ironwood, Mich.—L. W. Brock is connected with the Pneuvac Company, Boston, promoting and selling vacuum cleaners.—Harry Burhans is secretary of the Burhans & Black Co., hardware dealers, and has charge of the mill and factory supply end of the business. Harry is secretary-treasurer of the M. I. T. Club of Central New York, consisting of men in Rome, Utica, Oneida, Auburn and Syracuse.—A. L. Burwell is a chemist with George Dudley & Son Co., of Winsted, Conn. This concern runs a tannery for sheepskins, hemlock bark and alum being the chief tannages. Burwell is installing a new tannage which produces a pure white leather which resembles chamois in its properties, and is marketed for glove purposes. Burwell unfortunately was laid up in

the hospital for five weeks, owing to an explosion of a so-called "non-inflammable" degreasing liquid. His entire head and hands were badly burned, but his eyes were not injured. He had a visit from Fred Moses, '07, Course V., while in the hospital.—A. H. Cenedella, Broadhead, New York.—Chaffee is still teaching some and doing research work in the Jefferson Physical Laboratory at Harvard College. His "most charming duty is teaching a course of physics at Radcliffe."—Howard Chase is with J. H. Tower Iron Works at Providence, R.I., designing and estimating steel and iron work for all kinds of structures.—Kenneth Chipman is still with the Geological Survey at Ottawa, Canada. He spent eight months of 1910 in British Columbia and four in the office at Ottawa. He mapped 900 square miles at two miles to the inch during that time.—A. O. Christensen continues to live in Sombretete, Zoc, Mex. He is superintendent of a silver mine there, which is 400 years old, but still making good. He has charge of everything underground, and enjoys the work. His boss is 100 miles away and seldom turns up.—W. B. Coffin is draughtsman with R. Clipston Sturgis, and has done considerable superintending as well as draughting, 40 Oakland Road, Brookline, Mass., is his address.—H. B. Conover is at Atlantic Highlands, N.Y.—Sam Coupal now has the nice easy address of Apt. 16, Tehuantepec, Oaxaca, Mex. He is with the United Mining & Exploration Company, now operating the Santa Lucia Mine at Santa Marganta. Sam is manager of the outfit, having his headquarters at Tehuantepec, and spending about two weeks out of four at the mine, which is three days' hard horseback riding from the railroad. Sam says:—"This town (Tehuantepec) very conservatively boasts of having the prettiest woman in the Republic. It is a trifle hot here, but is sure a coming country. I have just started in here, and have hopes for a big future. Expect to return East for a visit in about a year."—E. R. Cowen, 4419 Racine Avenue, Chicago, Ill.—George A. Crane is now with Thompson-Starret Company, 502 Worcester Building, Portland, Ore.—Ralph Crosby is back East again, living in Wakefield, Mass., and working for Stone & Webster, "drawing power-houses,—and wages."—Paul Cumings is living at the Technology Chambers, Boston, and is working for James Purdon, architect, just as he has been doing since June, 1907.—L. D. Davenport has been with the Oliver Iron Mining Company, Chisholm, Minn., ever since the summer of 1906, working in the engineering department all the time except for six months last summer, when he worked underground as shift-boss. During the past year he has done considerable work for a professor of mining at the University of Minnesota, who is writing a book on mining in that part of the country.—F. A. Dempwolf has just returned from two years and a half of study and travel abroad, and is now practising architecture in York, Pa.—C. R. Denmark is a very necessary man in Washington, D.C.

He is engineer in charge of the power plant for the museum buildings and the Smithsonian Institute there, and also has charge of the heating, ventilating, lighting and plumbing in these buildings.—L. A. Dickinson is now with the Automobile Club of America in New York. His chief work now consists in making route-maps and making up tours for members of the club. His address is 317 West 56th Street, New York.—V. H. Dickson is with the Powers Regulator Company, 40 Dearborn Street, Chicago, Ill. This concern makes and installs apparatus for controlling temperatures to one degree Fahrenheit, for every purpose where accurate results are desired.—Clif Draper continues his work with the Department of Agriculture, Office of Public Roads, in Washington. He is investigating various bituminous road materials and their application to the movement for good roads.—K. W. Dyer is secretary-treasurer and purchasing agent for the Frisbie Motor Company, Incorporated, Middletown, Conn. This concern manufactures gas engines for marine and stationary work. Their engines "are used all over this country, British Columbia and Alaska, and are making good. Have been on the market several years. Four cycle 3 to 75 H.P., 1 to 6 cylinders.—"Chick" Eaton is lieutenant, U. S. A., stationed at Fort Wadsworth, New York.—M. H. Eisenhart is assistant superintendent of the chemical plant at Eastman Kodak Company, Rochester, N.Y. Most of the heavy chemicals used in the works are made in his department. His address is 508 Oxford Street, Rochester, N.Y.—E. C. Evans, 277 Princeton Street, East Boston, Mass.—O. G. Fales has been engineer in charge of the construction of the new plant of the Gregg Company Limited, at Lodi, N.J., during 1910. His address is care of The Gregg Company, Ltd., Hackensack, N.J.—Paul Frederick, care of Cia Docos de Santos, Santos, Brazil.—Roy F. Gale is with the Midvale Steel Company, Philadelphia, Pa. He is responsible for the steam end of the power used at the plant. On February 25, he sailed for a two months' trip through Italy, France, Germany and England.—J. M. Gaylord, 605 Federal Building, Los Angeles, Cal.—J. E. Garratt is working with the city engineer of Waltham, Mass., for the City Board of Survey. He is making suggestions and surveys for new streets and changes and additions to old streets.—W. A. Gates is structural engineer and superintendent for a concern of architects, 701 Majestic Building, Oklahoma City, Okla.—W. I. Griffin's address is 13 West Street, Utica, N.Y.—Albert E. Greene is an electric furnace expert and also engineer for the American Electric Smelting and Engineering Company, 1251 Monadnock Block, Chicago, Ill. This company "is prepared to undertake the solution of commercial problems of electric and chemical or electro-metallurgical nature, and their specialty is the construction, installation, and operation of electric furnace plants for refining steel, reducing iron, copper and lead ores, and also for pure heating purposes." As mentioned

in the March REVIEW, Albert is to contribute a paper on his specialty at the Congress of Technology.—A. E. Hartwell is with the Hartwell Iron Works, Houston, Texas. They do general foundry, machine and structural business. Pastoriza, '07, spent the Christmas holidays with Hartwell.—Hud Hastings is acquiring information as rapidly as possible regarding the steel business from his work with Joseph T. Ryerson & Son, Chicago. His address is 4559 Woodlawn Avenue, Chicago, Ill.—Warren Hastings is assistant mine and open pit foreman with the New Jersey Zinc Company, Franklin Furnace, N.J.—J. P. Hinckley is a salesman for the L. E. Knott Apparatus Company of Boston. Their line is supplies for physics, chemistry, biology and physiography work in schools and colleges and business houses.—Walter Hoover is with Hammond Boynton Paint Company of Boston, selling their various lines of protective paints.—C. M. Hutchins is superintendent of the Rockland, Mass., factory of Rice & Hutchins, manufacturers of men's shoes. The output at this one factory of the seven operated by the concern is 3,000 pairs daily.—E. W. James, of Tech show fame, describes himself as "highway engineer in the field; advising, consulting, and constructing, with regard to road materials, county highway systems, maintenance organization, administration, etc.; construction of 'Object Lesson Roads,' expert reports of county systems a specialty." His business card says: "U. S. Highway Engineer, Office of Public Roads, Washington, D. C." A letter from him from Mobile, Ala., reads thus:

Just four years ago this month, almost this very day, I left Tech for the Philippines. Since then I haven't seen a Tech man with whom I was personally acquainted. Last night my good friend, the city editor of the *Mobile Register*, called me up on the 'phone, and said he had tickets for "Madam Sherry." We went; and the program thoughtfully informed me that the stage manager was James Francis, who staged the Tech shows so long. Of course we got together during the first possible intermission, and exchanged the cordial "mitt." Jim isn't a *bona fide* Tech man, but he was one of the play bunch, and the first familiar Tech face I had seen in many moons. I certainly was glad to see him. Seeing him, however, served to emphasize the isolation (Tech-nically speaking) in which I have lived since 1907. I've blessed the REVIEW that has come every now and then with news of the class, and I've kept in touch with the Alumni Association, but nothing more. Ten thousand miles, the tropics, and the mana spirit, have made life at Tech seem so far away as to be almost beyond recall. And here it all comes back on the "Madame Sherry" program, while old Ben Thomas is pumping me about Mobile County road building. Yes, I'm back from the Islands—brought back fifteen trunks and chests of far-eastern plunder—and glad to be in the temperate zone once more. I've covered some distance since quitting Tech. In fact, I'm the long distance trotter of '07, I expect. Since February, 1907, I've made a trip around the world and through Europe, covering about 30,000 miles. Since getting busy on my return, I have covered about 9,800 miles to date, and am still going some. Just now, I am trying to show Mobile County, Alabama, how to get her money's worth in good roads out of a half-million dollar bond issue. I saw John Caton in the Philippines—we were on the same station for a while, and Draper is in the laboratory of "my Washington office," and Jim Francis goes over to Pensacola with "Madame Sherry" tonight.

P.S. I don't write rag-time verse any more. My wife won't let me.

Grandville R. Jones is assistant superintendent of the filtration plant at Washington, D.C. They have twenty-nine acres of filtering area and filter about sixty million gallons per day.—Harold Kingsbury is third assistant examiner in the United States Patent Office, with another man, handling the class of photography. They pass upon the operativeness and patentability of all inventions having to do with photography. Kingsbury's particular line is films, plates and color photography. He graduated from the National University Law School in June, 1910, with the degree of L.L. B. He is at present studying at George Washington University for the degree of Master of Patent Law. Both schools provide evening courses, which were the ones he took, doing his studying after returning from recitations at 8.30 p. m. He was admitted to the District of Columbia Bar in February, 1911.—R. F. Knight, 215 Bassett Street, New Britain, Conn.—Our old friend, Kolatschevsky, writes from 35 Rue Coquilhat, Antwerp, Belgium. He is with the Bell Telephone Manufacturing Company, which is a western electric house, and is headquarters for branch houses in London, Paris, Berlin, Vienna, and Rome. He has taken the apprentice course, and has also been assisting in the laboratory for some months. He is now in Brussels doing installing work. He says that Europe is almost undeveloped, "telephonically speaking."—A. G. Labbé is assistant manager for the Willamette Iron & Steel Works at Portland, Ore. They manufacture hoisting machinery, logging engines and steel ships, employing 400 men.—E. G. Lee is with Sawyer & Moulton, Portland, Me. He has been doing mostly cost-keeping work connected with the Ayisohos dam which his concern is building for storage purposes in the head-waters in the Androscoggin River. He has been laid up for seven weeks during January and February with an attack of scarlet fever, but is back at work again now.—E. F. Lewis, 148 Holden Street, Providence, R.I.—H. D. Loring is living at 4601 Columbia Avenue, Madisonville, Ohio. He is with the Ferro Concrete Construction Company of Cincinnati, doing estimating and designing work, along with a little outside work hustling for contracts. E. C. Noyes, '07, is with the same concern, and Loring says they recently had an '07 reunion at Noyes' home in Hartwell, Ohio. These two fellows claim a record for rapid-fire chess—three games an hour.—B. P. Luce, 723 Magazine Street, New Orleans, La.—W. S. Lucey is now doing mechanical engineering work with the Canadian Kodak Company, Toronto, Canada. His address is 54 Murray Street, Toronto.—George Luther is managing the Denver office of the Electric Storage Battery Company, whose home office is in Philadelphia. Their chief line is supplying batteries to automobiles. This Denver office was opened last June, and business has been very good. Luther says he recently met Jack Donaldson, '07, Course III., who is secretary-treasurer of the Denver Fire Clay Company.—H. J. C. Mac-

Donald is superintendent of the Hidden Creek Copper Mine, Goose Bay, via Prince Rupert, B.C.—Milton E. MacGregor is teaching mathematics and mechanical drawing at the Pawtucket High School, and is looking after the athletics there.—As mentioned in the March REVIEW, Sam Marx is making good with a vengeance in his architectural work. He lives at Chicago Beach Hotel with John Frank.—H. H. McChesney, 1511 East Genesee Street, Syracuse, N.Y.—John McMillin is engaging in high finance with the firm of Henry L. Doherty & Co., 60 Wall Street, New York. Stuart Miller says he received a gold-brick circular from John a short time ago. The secretary got one, too. John is as smooth as ever, it seems.—H. C. McRae is assistant division engineer of the Disposal Division of the Baltimore Sewerage Commission. They are constructing a disposal plant that will treat 75,000,000 gallons per day.—Nat Middleton is president of the Whiting-Middleton Construction Company of Baltimore. They are contractors and designers for bridges, sewers, dams, and foundations.—Stuart Miller is now residing at 3366 Morrison Avenue-Clifton, Cincinnati, Ohio. He is traveling salesman in the wholesale paper business in western Ohio and eastern Indiana, his firm being the Whitaker Paper Company. “Stu” asks the secretary to give his best regards to all the class, and suggests that he would be mighty glad to receive some letters from the fellows. (Probably there are many more who feel the same way. Let’s all take a few minutes now and then and write to some of our old friends of 1907.)—W. D. Milne can be reached by addressing a letter to Box 22, Newberry, South Carolina, where he is representing Lockwood Greene & Co., in their construction of a 20,000 spindle cotton mill.—Harry Moody is selling steam turbines, condensers, gas engines, etc., for the Westinghouse Machine Company. His home is at 5 Walker Street, West Somerville, Mass.—J. G. Moore, Piedmont Traction Company, Charlotte, North Carolinas.—G. A. Murfey is living in Altadena, Cal.—Since the first of February, 1911, Floyd Naramore has been with Emil Schecht & Son, architects, Portland, Ore. He has charge of the structural design of their work.—J. S. Nicholl, 144 Columbia Heights, Brooklyn, N.Y.—George Norton is still enjoying the hard work of being first lieutenant in the U. S. A. He says it is not much like Freshman drill, so he likes it. He is stationed now at Fort Andrews, Mass.—“Tucky” Noyes is inspector of general construction work at the Boston Navy Yard at Charlestown, Mass.—George Otis is in the sales end of the business with American Blue Stone Company of New York City.—“Pack” (Emerson H.) is in the research department of the Eastman Kodak Company at Rochester, N.Y., and is living at 297 Alexander Street in the same city. He says there are nine Tech men with the company now, the latest arrival of whom is Russ, ’07, the chemical “shark.”—Hugh Pastoriza is electrical man for the Telluride Power Com-

pany, Provo, Utah. The company has about 500 miles of 45,000 volt transmission line in Utah and Idaho.—O. L. Peabody's address now is 787 Washington Street, Norwood, Mass.—J. R. Randall, of Course II., is with the Powell River Paper Company, Powell River, British Columbia.—Allen Pope is living at 3551 Holmead Place, Washington, D.C.—Arthur Remick is practising architecture with considerable success in New York City. He is living at 44 West 44th Street.—E. C. Richardson, left the American Locomotive Company and went with Allis Chalmers Company on September 1, 1910. He is doing production, bonus system and business management work. His address is 467 Marshall Street, Milwaukee, Wis.—E. M. Richardson is still with the American Locomotive Company at their New York office, 1886 Broadway.—Winslow Robinson is with F. W. Dodge Company of Boston. Mail will reach him if addressed to Box 2953, Boston, Mass.—S. E. Rockwell is now keeping house at 112 Magnolia Street, Dorchester, Mass. "Rocky" is chief draughtsman and assistant engineer for the Ambursen Hydraulic Construction Company of Boston.—Vernon Rood writes from Utah Apex Mining Company, Bingham Canyon, Utah. He says:—"For the past year I have been a shift-boss whose principal duties seem to be keeping the hard-rock miners from sleeping in the stopes and kicking to the superintendent about the other shift. Not so strenuous as catching the last train at Wellesley, and requires no Page & Shaw's. Kinnear was in camp a couple of months last fall, and Pastoriza occasionally drops in to check up the I-R drop on his company's transmission lines."—L. P. Russell is at 15 Copley Terrace, Pittsfield, Mass.—Merton Sage is assistant patent examiner in the Division of Electrochemistry and Metallurgy.—Roswell Sampson is with the Quincy Mining Company, Hancock, Mich.—Fred Schmidt has returned from a year's study and travel in Europe, during which time he was with Dempwolf a good deal, and is located at 26 King Street, Westfield, Mass.—"Becky" Sharp can be found at 81 4th Street, New Bedford, Mass.—F. B. Shields has charge of the factory of the Smithport Extract Company of Boston, Mass., and Damascus, Va.; is also one of the three owners of the business. They have a railroad of their own, and "since the Virginia laws require the election of a vice-president, and there was no one else, this honor (?) fell to him. The road is only sixteen miles long, but is divided into three separate corporations."—T. L. Smith is chief clerk at the Richmond, Va., plant of the American Locomotive Company. They employ from 2,000 to 3,000 men. Smith's address is Gresham Court, Richmond, Va.—Winsor Soule has been doing some superintending and much draughting for his firm (Allen & Collins of Boston), and also several good jobs on the outside. He lives at 1571 Beacon Street, Brookline, Mass.—Ed. Squire is working for the Olds Motor Works, Boston. He is in charge of the repair shop and parts

department, taking care of all shipping to New England branches. Later he expects to go into the selling and managing end. He has his home at 57 Oakwood Road, Newtonville, Mass.—Oscar Starkweather has left his "old Kentucky home" and has come North again to Needham, Mass.—H. A. Sullwold, 1773 Summit Avenue, St. Paul, Minn., is with Reed & Stem of the same city. He is one of their designers, and has build a house on the side, and in February had two more houses and a garage on hand.—A. H. Tashjian is located in the Oxford Building, Portland, Me. He is architectural engineer with John Calvin Stevens, architect. He has designed the largest reinforced concrete factory in Maine, a bridge for the Soldiers' Home in Hampton, Va., and a large power house. He is enjoying his work and looks forward to a successful future.—R. K. Taylor is an inspector for the Boston Transit Commission on the new subway work in Boston regarding excavation and placing of concrete masonry and steel reinforcement.—Bob Thayer has settled in his new home at 463 North Grove Street, East Orange, N.J. He is associate editor of the *Railway Age Gazette*, working simply on the mechanical end of railway work.—Carl Trauerman is a mining engineer with the La Plata Gold Mining Company, Durango, Col. In January he was working on tests for a proposed 500 ton cyanide mill. He was appointed by the director on the mining department of the Colorado State Immigration Bureau to write two articles for publication on the mineral resources of two counties in Colorado. During his spare moments he writes financial articles for several of the papers, for he had a good bit of training at this while on the staff of the *Wall Street Journal*.—J. E. Tresnon is with the Telluride Power Company, Telluride, Col. He writes:

I am the representative of the company to the customers, who are entirely mining companies. This takes me to the different mines and mills in the district, most of which are situated on the mountain tops. I am writing this from the mine of the Barstow Mines Company, which is located near Ironton, Col. The general manager of this mine is C. R. Wilfrey, a former Tech student who took a special mining course with '06. In order to get here from headquarters (Telluride) I had to travel on train to Ouray thence on horseback. I met Wilfrey this morning and we started out in the snow dressed like cowboys. The general attire consisted of a close fitting cap, leather coat, chaparros (those are the leather covers which are drawn up over the pants, and have sometimes leather strings ornamenting them—sometimes are made of bushy skins), and high shoes. We arrived here after a rather hard ride of four hours. The last part of the trip was over a narrow trail which was trodden-down packed snow about a foot wide. If the horse got off the trail he would be straddled across the trodden path with his feet pawing vigorously at soft snow, of which there would be from six to ten feet below him, and his head sticking out from the snow. A little pulling on the reins got him back on the trail again without our losing the horse. If he had got off the trail on the lower side with all four feet, so that he did not straddle the path, we might have lost him. I am hoping to get away from here tomorrow, but they do not think it will be possible because we will be snowed in. We have a lively Tech bunch in the Colorado department of the Power Company. J. C. Damon, '05, has charge of everything pertaining to the engineering work. A. L. Harding, '10, has successfully installed a device to indicate in our power station the height of water in our pressure tank. G. H. Horton, '10, is making estimates on a pipe line.

—F. W. Tupper is in business for himself in Walden, N.Y., contracting for excavation and concrete work.—E. E. Turkington is an electrical inspector of factories and inspector of electrical fittings and devices for the Factory Mutual Fire Insurance Company of Boston.—C. V. Turner is with the Pierce Phosphate Company, Pierce, Fla.—L. T. Walker is at Fort Hamilton, N.Y., second lieutenant, U. S. A.—P. B. Webber is, treasurer and general manager of the Commonwealth Gas & Electric Companies, Athol Gas & Electric Company, Marlboro-Hudson Gas Company, Westboro Gas & Electric Company, and treasurer of the Marlboro Electric Company. His office is 313 Shawmut Bank Building, Boston, Mass.—Lawrence Wetmore, 26 South High Street, New Britain, Conn.—E. F. Whitney, 609 Colman Building, Seattle, Wash.—L. C. Whittemore says:—"For the past six months I have been located here in Cornwall, N.Y., in charge of shaft No. 5 of the Moodna Pressure Tunnel, having been transferred here from the Poughkeepsie office of the Board of Water Supply last July. The work is mostly underground, and is interesting in many particulars, and at times exciting."

1908.

JOHN T. TOBIN, *Sec.*, care of F. F. Harrington, Bridge Engineer, Virginian Railway Company, Norfolk, Va.

RUDOLPH B. WEILER, *Res. Sec.*, 26 Brooks Street, Brighton, Mass.

I. On the Part of the Resident Secretary.

At the alumni dinner on January 4 the following '08 men were present: H. R. Calloway, Alexander Ellis, Jr., "Pop" Gerrish, H. P. Gurney, Sherwood Hall, Jr., Orrin S. Lyon, Peter F. McLaughlin, Everett H. Newhall, Channing Turner, Edmund L. Warren, Charles W. Whitmore, Rudolph B. Weiler. This is an increase of one over the number that attended last year, and it is interesting to note that only three of the above attended the dinner a year ago.—The regular bi-monthly dinner was held at the Technology Club, 83 Newbury Street, on January 10. The following were present: R. B. Weiler, who presided, Lawrence H. Allen, Carl H. Bangs, C. L. Batchelder, B. W. Cary, C. W. Clark "Clif" Cochrane, Langdon Coffin, Alton M. Cook, Leslie B. Ellis, W. D. Ford, W. C. Folsom, "Pop" Gerrish, A. W. Heath, W. B. Hunter, H. H. Howland, S. C. Lyon, E. H. Newhall, E. R. Smith, R. B. Todd, F. T. Towle, Charles W. Whitmore and Conrad Youngerman. "Nick" Carter and "Bill" Flaherty were also present, but were unable to remain for the dinner. "Nick" had to go to a dance as usual. The arguments for an increased grant from the state were read and discussed. It was decided to hold the next dinner, which is the annual meeting, at the American

House. It was decided to attend the informal weekly luncheons held at the American House on Fridays, 12.30 to 1.30, by the classes from '01 to '10, instead of trying to hold an independent weekly luncheon of our own. No invitation or notice is necessary in order to attend. "Cliff" Cochrane announced the arrival of an eleven and a half-pound son, Richard Maurice, on September 27, 1910, at Melrose. No engagements or weddings had taken place since the previous meeting, or at least none of those present would admit any. After the meeting the fellows spent the remainder of the evening socially at the club.—The regular bi-monthly dinners were inaugurated at the annual dinner last March, and the one just reported completes the year. The attendance during this period has shown a steady and gratifying increase, as may be seen by the following tabulation: March, 1910 (annual meeting), 25; May, 9; July, 17; September, 19; November, 21; January, 25. On March 1 the resident secretary sent out to every name on the mailing list the third annual letter containing a request for cash and for information. Prompt returns of both are desired, so if you haven't sent in your reply yet please do so at once. Complete returns of the salary canvass will be published in the July REVIEW. Anything for that issue should be received by June 8.—Vonnegut & Bohn, architects, 610 Indiana Trust Building, Indianapolis, Ind., announce that Mr. Kurt Vonnegut, son of the late Bernard Vonnegut, has been admitted to membership in the firm. Congratulations are due Kurt.—A. T. Scannell is president of the Archer Iron Works, Western Avenue and Thirty-Fourth Place, Chicago, Ill. L. A. Clark is secretary-treasurer of the same firm. They both live at 3801 Michigan Avenue.—Our list of unknown addresses is increasing. We will be pleased to receive addresses of the following: M. L. Bodenstein, George R. Cooke, Miss Susie T. Folsom, A. F. Mohan, U. J. Nicholas, Walter L. Pratt, Henry J. Ruggles, Hardy Cross, G. J. Venn, S. Chochian, H. G. Hume.

II. Matrimonial

In the July number there will appear a complete list of all those who, up to date, have been reported married, and names of children, if any. Some have reported that they are married to business. A large number have written across the face of the card "Not yet, but soon." Still others have "secret hopes," and some say "nothing doing." Engagements announced: Irving M. Guilford to Miss Emma Makepiece Fitch of Allston, Mass.—Horace S. Sargent to Miss Marie W. Christie of Everett, Mass.—Arthur C. Merrill to Miss Florence L. Masson of Hammondsport, N.Y.—Mathew Porosky was married January 11, 1911, to Miss Harriet Bessie Isaacson.—And here is "Joe" Reid, after hiding

his light under a bushel, announcing his marriage to Miss Nancy Louise Andrus on December 27th, 1910.—Raymond E. Drake was married March 20, 1911, to Miss Blanche Louise Cary of Brockton, Mass.

III. Letters

We print the following from A. F. Edge, Cliffside, N.J.:

. . . My present location is in an out-of-the-way place on top of the palisades opposite 110th Street, New York City. The factory is directly beneath on the river's edge, and I, with the other cliff-dwellers, have to climb down and back. I have long since ceased to discuss other means of locomotion. The latest is a high dive down and an aëroplunk back. The plant is the Edgewater plant of the Corn Products Refining Company producing corn starch, glucose, sugar, oil, feed, and oil-cake at the rate of 27,000 bushels of Indian corn per twenty-four hours. I have the supervision and testing connected with the manufacture of thin-boiling starch used in the textile and confectionery trades. My location prevents my taking part in reunions, etc., in Boston, but I attend the Tech Club of New York and see some friends at their meetings.

Ralph T. Regnell writes from The Right of Way Mines, Ltd., Cobalt, Ontario:

. . . I am more than sorry I cannot get down for the class dinner as I haven't been away from here in seventeen months now, but hope to get back to the "Old Town" sometime and see some of the old bunch. I see Heimer once in a while here and have knocked around with Joslin and Loring, '09, quite a lot, but haven't seen them for some time. I would like to be there, and you might say a little prayer for me and the other absent ones if you happen to go to "Chapel."

From 126 Lewis Street, Perth Amboy, N.J., Howard E. Batsford writes:

Three weeks ago our end of this concern [Roessler & Hasslacher Chemical Company], the research department at Niagara Falls, picked up its belongings and boarded a train to be taken under the wings of the parent concern. So you find me now writing from New Jersey instead of New York. Down here I begin to get among Tech fellows who are on the job. We have three plants here besides the research department. In Plant No. 1 Gardner, '08, is assistant superintendent, in Plant No. 2, Sargent of an earlier class is superintendent and in Plant No. 3, Colby Dill, '06, is superintendent. So you can see that Tech is represented in all departments of this company. Of the three men I come in contact most with Gardner who is kept very busy with operating and construction work. The only other '08 man with whom I have been in correspondence lately is C. W. Clark, who is very busy between his plant in Boston and the one in Baltimore. At present I'm hoping that his boat may become grounded or his train stopped close enough for him to make us a visit.

IV. New Addresses

Lawrence H. Allen, New York, New Haven & Hartford R. R., Maintenance of Way Department, South Station, Boston, Mass.—Charles B. Ambrose, 14 Beacon Street, Boston, Mass.—Carl H. Bangs, care of Densmore & Le Clear, 88 Broad Street, Boston,

Mass.—John S. Barnes, Merrell-Soule Company, Syracuse, N.Y.—Howard E. Batsford, Roessler & Hasslacher Chemical Company, Perth Amboy, N.J.—C. L. Batchelder, City Engineer's office, Lowell, Mass.—George M. Belcher, care of W. H. McElwain Company, Manchester, N.H.—Henry W. Blackburn, Instructor in Mechanical Engineering, University of Vermont, Burlington, Vt.—Wilfred E. Booth, Standard Gauge Manufacturing Company, Foxboro, Mass.—Donald Bowman, Engineering Department, Commonwealth Edison Company, 84 Market Street, Chicago, Ill.—C. H. Boylston, transitman, Grand Trunk Railway, 1 Cowan Avenue, Toronto, Ont.—Philip C. Brown, care of J. B. Williams & Sons, Dover, N. H.—Douglas Cairns, 621 Albany Street, Boston, Mass.—Walter E. Caldwell, care of W. E. Caldwell Company, Brook & D Streets, Louisville, Ky.—H. R. Calloway, 170 Summer Street, Boston, Mass.—Burton W. Cary, 53 State Street, Boston, Mass.—Charles J. Carter, Instructor in Mechanic Arts, University of Maine, Orono, Me.—Chester S. Colson, Yorick Club, Lowell, Mass.—R. W. Cushing, Cohasset, Mass.—J. C. Childs, 4002 Highland Avenue, Kansas City, Mo.—E. S. Church, Indianapolis, Ind.—S. Lock Davidson, Abstractor, Court House, Wichita, Kan.—H. W. Dun, Jr., Bridge Inspector, New York Central & Hudson River R. R., Malone, N.Y.—Alexander Ellis, Jr., care of Russell & Fairchild, 20 Kilby Street, Boston, Mass.—R. C. Folsom, Standard Refinery, Granite Street, Boston, Mass.—W. C. Folsom, Chief Sanitary Inspector, Board of Health, City Hall, Cincinnati, Ohio.—W. D. Ford, 7 St. Paul Street, Cambridge, Mass.—A. L. Gardner, Assistant Works Manager, Roessler & Hasslacher Chemical Company, Perth Amboy, N.J.—H. T. Gerrish, Eastern Dredging Company, 247 Atlantic Avenue, Boston, Mass.—Irving M. Guilford, Assistant to Treasurer, Ball & Socket Mfg. Co., West Cheshire, Conn.—Carl A. Hall, Concord, N.H.—Melville B. Hall, Westinghouse Electric & Machine Co., St. Louis, Mo.—Sherwood Hall, Jr., Cadillac Automobile Company, 372 Boylston Street, Boston, Mass.—Arthur N. Hastings, Corrugated Bar Company, St. Louis, Mo.—Arnold W. Heath, 534 Hyde Park Avenue, Hyde Park, Mass. (after May 1)—Robert D. Hennen, County Road Engineer, Morgantown, W.Va.—Ira G. Hersey, Hingham, Mass.—A. R. Hunter, Noiseless Typewriter Company, Middletown, Conn.—W. B. Hunter, Director Industrial Department, Fitchburg High School, Fitchburg, Mass.—W. A. Johnston, Jr., S. S. White Dental Manufacturing Company, Prince Bay, Staten Island, N.Y.—Charles F. Joy, Jr., Transitman, Boston & Maine R. R., Engineering Department, North Station, Boston, Mass.—Karl R. Kennison, 815 Banigan Building, Providence, R.I.—W. B. Kirby, traveling on the M. I. T. Traveling Fellowship.—J. A. Kydd, Assistant Chemist, American Woolen Company, Riverside Worsted Mills, Providence, R.I.—Chester B. Lambirth, State Trade School, New Britain,

Conn.—George C. Lees, Mechanical Engineer, National Metal Lath Company, Plainville, Conn.—A. A. Longley, Factory Mutual Fire Insurance Company, 31 Milk Street, Boston, Mass.—S. C. Lyon, 47 Paul Street, Newton Center, Mass.—J. C. McGowan, Jr., Chief Chemist, Joseph Campbell Co., 32 North Front Street, Camden, N.J.—J. Scott MacNutt, Health Officer, 227 Main Street, Orange, N.J.—R. E. Manning, 31 Milk Street, Boston, Mass.—A. C. Merrill, Instructor in Mechanical Engineering, University of Pennsylvania, Philadelphia, Pa.—Peter C. McLaughlin, of McLaughlin & Siebert, Architects, Agricultural Bank Building, Pittsfield, Mass.—Harold S. Osborne, Engineering Department, American Telegraph & Telephone Co., 15 Dey Street, New York, N.Y.—Robert T. Pollock, Ashland, Mass.—Mathew Porosky, Estimating Engineer, Holtzer Cabot Electric Company, 621 Albany Street, Boston, Mass.—H. A. Rapelye, Sales Department, Westinghouse Machine Company, 500 Westinghouse Building, Pittsburgh, Pa.—Ralph T. Regnell, Assayer, Right of Way Mines, Cobalt, Ontario.—Joseph G. Reid, Supervising Engineer, Buckeye Cotton Oil Company, Atlanta, Ga.—H. F. Richardson, 112 Lafayette Avenue, Brooklyn, N.Y.—Joseph B. Sando, Chief Engineer, Centrifugal Pump Department, Goulds Manufacturing Company, Seneca Falls, N.Y.—Horace S. Sargent, Stanley Motor Carriage Company, Newton, Mass.—Lieut. Charles M. Steese, Coast Artillery Corps, U.S.A., Fort Terry, N.Y.—James M. Talbot, S. S. White Dental Manufacturing Company, Prince Bay, Staten Island, N.Y.—Robert B. Todd, American Dyewood Company, 115 High Street, Boston, Mass.—Aram Torrossian, 50 Bromfield Street, Boston, Mass.—Franklin T. Towle, 84 State Street, Boston, Mass.—Douglas B. Turner, Isabella, Tenn.—Edmund L. Warren, 348 Congress Street, Boston, Mass.—J. W. Wattles, 3d, 39 Boylston Street, Boston, Mass.—Harry Webb, 348 Congress Street, Boston, Mass.—Allen T. Weeks, Acushnet Process Company, New Bedford, Mass.—Geoffrey W. Welch, Upper Iowa Power Company, Decorah, Ia.—Charles W. Whitmore, Superintendent, Monks & Johnson, Engineers, 7 Water Street, Boston, Mass.—Clifford L. Wade, 18 Willis Street, New Bedford, Mass.—W. Elliot Weinz, P. O. Box 55, Atlanta, Ga.—Conrad Youngerman, care of G. Henri Desmond, Architect, 15 Beacon Street, Boston, Mass.—Horace E. Allen, Toledo Railway & Light Company, Toledo, Ohio.—Howard E. Batsford, Roessler & Hasslacher Chemical Company, Perth Amboy, N.J.—S. H. Daddow, of Youse & Daddow, Automobile Dealers, Pottsville, Pa.—Allston Dana, Empire Bridge Company, Elmira Heights, N.Y.—Samuel F. Hatch, Fairbanks Scale Company, St. Johnsbury, Vt.—H. F. Kuehne, adjunct professor of Architecture, University of Texas, Austin, Tex.—Donald H. Maxwell, care of Alvord & Burdick, 1212 Hartford Building, Chicago, Ill.—Alexander C. Sloss, Jr., City National Bank

Evanson, Ill.—A. H. Thompson, 722 Franklin Street, Melrose Highlands, Mass.

The annual dinner was held at the American House, Hanover Street, Boston, Tuesday evening, March 14, at 7.30 p. m. Bursar Rand was the guest of the evening. The following were present: "Pop" Gerrish, who presided, Rudolph B. Weiler, Lawrence H. Allen, Carl H. Bangs, W. E. Booth, Harry S. Chandler, Frederick A. Cole, Leslie B. Ellis, Alexander Ellis, Jr., W. D. Ford, H. W. Flaherty, Sherwood Hall, Jr., C. F. Joy, Jr., C. Waldo Morrison, Edward J. Scott, Frank W. Sherman, Charles W. Whitmore. For the Alumni Association Gerrish reported on the Congress of Technology and the establishment of a summer school of civil engineering. It was decided to cut the local mailing list in half by removing the names of all fellows who do not show any interest in class affairs, in order to reduce the cost of mailing for the bi-monthly dinners. It was decided that it would be unwise to discontinue sending out return reply postal cards. Though ill, Mr. Rand kept his promise to come to the dinner, but was unable to remain long. In appreciation of the sacrifice he made to attend, the class voted to instruct the resident secretary to have some flowers, with a suitable note expressing the feelings of the members, placed on the bursar's desk at the Institute before he arrived there next morning. The resident secretary read a number of letters from fellows who were unable to be present, and information concerning absent members, addresses, etc., was given on request of those present. A rising vote of thanks was given the resident secretary for the efficient manner in which he has conducted the class business. The meeting adjourned at 10 p. m. The next bi-monthly meeting is May 9, at the Technology Club.—It would be considered a great favor if members after notifying us that they will attend a dinner will also notify us when they change their minds or find that they cannot come.

Last May the class lost by death M. T. Jones, Jr., but as it was not reported at once we are only now able to present the following appreciation:

Maurice Trimble Jones, Jr., '08, Research Associate in Applied Chemistry at the Institute, died suddenly on May 25, 1910, of cerebral hemorrhage. That he was a man of the highest character and ideals can be best illustrated by the following incident:—Upon graduation he was offered, by a brewing company, a position at double the salary most of his classmates were getting. His work was to be partly research and partly routine work, including check analyses on brewing materials. He said that while he had no crow to pick with the brewing business, he had decided to devote his life to those things which made for the betterment of men, and as he didn't believe that the results of the work offered would be for the ultimate uplift of humanity, he could not accept. When he died, every man in the research laboratory realized that Jones had had a part

in his work in the way of advice, consultation and interest, and there was no work in the laboratory that did not suffer because of his death. After his death it was discovered that part of his evenings had been spent in teaching English, to a Chinese class without compensation, and that he had two Sunday School classes among the poor. His whole life work was devoted to those things which were helpful and to those things which made for righteousness.

1909.

CARL W. GRAM, *Sec.*, 131 North Twenty-second Street, Philadelphia, Pa.

MAURICE R. SCHARFF, *Res. Sec.*, Mass. Inst. of Tech., Boston, Mass.

I

The class dinner at the American House on February 2 was a great success. Only fifteen showed up, but they had such a good time that they voted to have dinners more frequently in future, and if possible, once a month. On account of the Technology Congress, however, it has been decided to hold the next dinner on April 10, as fitting preparation for the big time in Symphony Hall later in the same evening. Every 1909 man who attends the Congress, and that ought to include every one who can possibly find an excuse to get to Boston, should be at that dinner.—At the dinner on February 2 the following were present: Ayres, Scharff, Dow, G. T. Palmer, W. H. Jones, Bennett, M. E. Kelley, Spencer, Reeds, Nisbet, A. L. Shaw, Jacobs, Clifford and Thornley.—On the notices for the dinner of April 10 there will be a reminder to those who have not yet paid their dues for 1911. It is hoped it will prove effective, for strange as it may seem, it costs money to get out notices, etc., so look through your receipt file for a receipt for class dues, and if you don't find it, mail \$1 to A. L. Shaw, 234 Newbury Street.—One of the best things about the last dinner was that the reply cards brought much interesting news from many of the fellows who were too far away to come. It is hoped that this will always be so, and that whenever a 1909 man mails anything to the secretary, he will take time to write a few words of news of himself or of other 1909 men he has seen. Much of the class notes below have been gathered in this way.—The Friday luncheons at the American House Rathskeller continue successful, and any 1909 man can usually find several classmates if he drops in there on Fridays between 12.30 and 1.30.

II. *Matrimonial*

One striking thing about the reply cards was the number of marriages that should have been reported before. Don't hide your light under a bushel; make a mental note to add the class secretary's name to the list of those to whom announcements are to be sent.—H. F. Ballard (I.) was married last August to Miss Florence A. Berry of New Salem, Mass.—H. E. Myers (IV.₂) was married October 3, 1910, to Miss Edith Harriett Cobb of Newton Upper Falls, Mass. He writes, "Everything is decidedly lovely. Advise all others to go and do likewise."—Matthew Porosky (VI.) was married January 10, 1911, to Miss Harriet B. Isaacson of Roxbury, Mass.—M. E. Kelley (I.) was married October 29, 1910.—H. T. Gidley (I.) was married January 3, 1911, to Miss Gertrude E. Gibbs of Danvers, Mass.—Merton Belcher (IV.) was married in San Francisco, December 22, 1910, to Miss Janet E. Forbes of Berkley, Cal.—A card from Mrs. Stanley M. Udale brought the first news we had heard of the marriage of Miss Packwood (IV.) to Udale, '07.—X. R. Smith (XIII.) writes that Besselievre (XIII.) was married last fall.—Burr Robinson (III.) was married June 10, 1909, to Miss Clarity S. Giles of Boston. He thinks he was "one of the first of the '09 fellows to go."

Prospects

That future class notes will not be entirely devoid of a matrimonial section is indicated by the occasional news of an engagement that reaches the secretary.—G. E. Hodsdon (III.) writes blushing as follows: "Reading of the other fellows' doings decided me to stop hiding my light. 'I've been and done it too,'—my engagement was announced about Christmas to Miss Rena C. Bergengren of Lynn."—Thornley (II.) doesn't give many particulars, but writes, "Found one who promised to live a dual life with me. I rung her in."—And while we haven't heard any news in this line from Hartwell (II.) we have hopes; for Heidelberg (II.) writes from Houston that "Cupid is giving Hartwell a course of study now.—Finally, all will join in congratulating Miss Longyear (IV.) on her engagement, reported in the *Boston Herald*, March 1, as follows:—"New York, February 28.—The engagement of Miss Helen M. Longyear of Brookline, Mass., to Carroll Paul, civil engineer in the United States navy, was announced at a small tea given at the Hotel Gorham today by Mrs. J. M. Longyear."

III

The resident secretary acknowledges with pleasure the interesting letters and cards that have reached him from members of the

class, and hopes every 1909 man will take the time occasionally to write in about himself.—Our secretary, Carl Gram, has moved east, and is now in Philadelphia. He talks paint like a streak nowadays, and writes as follows:—"I met Glancy (VI.), Fred B. Wood (II.), John Christie (V.), besides many other Tech men at a regular smoker given by the Philadelphia Alumni in January the first week after arriving here. Each week they have a meeting to practice bowling to get in shape for the contests with the Washington and Baltimore teams." He also adds many interesting facts about his business: "I am with the Pyramid Paint Company in charge of the sales end and it keeps me hustling. Our product is as good and as lasting as the name, nothing else on the market to touch it. I wish I could hit Boston, but not for some time I guess."—D. K. Bullens (III.) accounts for his doings since he left the Institute in January, 1909, as follows:—

I amused myself for a year and a half by teaching metallurgy at the Pennsylvania State College; during the last year I was elected secretary to the faculty of the School of Mines. During the summer of 1909 I did some design work in metallurgical mill construction, and this last summer I was in the engineering department of the Chrome, N.J., refinery of the United States Metals Refining Company. I then spent three months in the graduate school of Applied Science at Harvard to round out my knowledge of metallography.

I then obtained my present position as metallurgical engineer of the Parish Manufacturing Company at Reading, Pa. We turn out special heat-treated pressed steel automobile frames, supplying many of the most important automobile companies. I have entire charge of all the metallurgical work, such as heat treatment, chemical analysis, physical tests, and in fact any thing that has to do with the "steel" side of the business. I might add that the company employs about 350 men, working night and day. I have a number of men directly under me, so that I have my own time free for general supervision and for working out such technical problems as may arise.

—Ray Allen (II.) has been heard from, and is evidently still up to his old tricks, and taking a leading part in the Ivory Soap Minstrels. He writes:—

I am now with the Proctor & Gamble Co. I also use Ivory Soap. I started in November scraping floors and sweeping them (to save soap). I progressed through the different processes, and am now running some fuel tests on test coal sent in by companies which are bidding for the new contract. The plant consists of forty-five buildings built of granite and a fine baseball diamond and tennis court. We have just given a minstrel show which crowded Music Hall (seating 3,600) twice, and drew a fair crowd at Madisonville. I was one of the "bones."

—And P. H. Chase (VI.), gives this account of himself:—

Just a word about myself since graduation. During the academic year 1909-10, I was at Harvard in the graduate school of Applied Science and in June, 1910, got the degree of M.E.E. (Master of Electrical Engineering). Last November I started work here for the Public Service Electric Company, and am assistant to the Superintendent of Distribution for Newark and vicinity.

Some of our classmates have managed to get a long way from Boston. Word has reached the secretary that H. C. Schriefer is to be in Siberia, mining copper, until November, 1911. And Fuller (I.) writes on February 27, from Santo Domingo: "Am eighty miles in the interior of the island, a three days' mule trip over the worst roads in the land and news is scarce. The last States paper we saw was January 1. Haven't seen a white person except our own party for two months."—Tillard (I.) writes from Khartum, Sudan: "My home here for three months has been a mud house on the banks of the Nile. I sometimes long for the inspiration of a T.T., and wish someone would take me back on a special camel to the glorious Institute. Am just off for three months with camels and tents and blacks working for me along the White Nile."—Mitchell (XI.) is up in British Columbia, and Van Eetvelde (II.) writes from Belgium that he is about to go to British Columbia to settle.—Jack Elbert (X.) is still a German student in Berlin, and writes: "Finally have my Arbeit started, and things are going first rate. Hope to see Bill Kelly at Leipzig soon."—Speaking of Bill Kelly, he wrote an interesting account of his studious life in Leipzig which seems to consist of traveling about from Leipzig to St. Moritz in Switzerland, enjoying all the winter sports and fine cross-country trips on skis.—F. M. Loud (VI.) says that he is busy learning the electric railway business with the Public Service Railway Company at West Hoboken, N.J., and that P. L. Adams (VI.) is with the same company.—Beers (X.) is superintending the construction of a ten-story hotel in Jacksonville, Fla.—I. W. Wolfner (II.) writes "I have just been elected assistant treasurer of the National Cooperage and Woodenware Company of Peoria, Ill. I am also purchasing agent. Most of my work is looking after the repair and operation of the power equipment of our two Peoria factories, whose combined output is 4,000 whiskey or oil barrels daily. Expect to be in Boston about April 12 for a couple of days."—Stephenson (X.) wrote in January: "Getting ready for mid-years. Have made out the qualitative exam. It's easier to make it out than to answer it. Have started a thesis for an M.S. but don't expect to finish it till 1912."—Rosenblatt (VI.) is assistant to the resident engineer on the construction of a hydro-electric plant and writes: "Am up in the wilds of Minnesota, nine miles from anywhere, where the thermometer hovers around 43 below."—A. B. Morrill (XI.) is still "making experiments and juggling results at the Sewage Testing Station of the Chicago Sanitary District."—C. R. Main (II.) is engaged in putting up a new mill for the Clinton Wire Cloth Company of Clinton, Mass.—L. H. King (IV.) says, "Saw Marshall, '09, and Lougee, '09, recently. The latter is in the furniture business in Hartford."—Bill Jenkins (II.) wrote: "A good picture of Eugene Luening appears in the *Iron Trade*

Review of January 26, 1911, in an article on the 'Oxyhydric Process of Cutting and Welding.' When I last heard from Schlitz he said he was going into this business for himself."—Jaeger (III.) writes that he has had charge of the laboratory of the American Smelting and Refining Company at Perth Amboy, N.J., since last September.—Hubbard (II.) writes that he is "designing and supervising installation of mechanical equipment of a new factory for the Mianus Motor Works, Mianus, Conn."—Hoyt (VII.) is health officer of Summit, N.J., and Palmer (VII.) has recently taken a position as Sanitary Inspector with the state board of health of New Jersey.—Healy (V.) has just "accepted a position as chief chemist with the Hartford Rubber Works, makers of Hartford Tires."—Hartwell (II.) writes, "I should indeed like to see a few of the boys. Heidelberg is the only '09 man down this way except myself, but there are altogether about a dozen Tech men in Houston."—H. M. Glazier (IV.) is instructor in architecture at the State College, Pennsylvania.—Matt. Fletcher writes from Indianapolis that he is breaking stone for the Bedford Stone Construction Company. He adds "Mr. and Mrs. M. K. Weill visited us recently."—W. C. Ferguson (II.), chief engineer of the Gilbert Hunt Company, writes from Walla Walla, Washington, that he saw Spike Hatton in Portland, Ore., some time ago.—Bradley Dewey (II.) is engaged in research work for the American Sheet & Tin Plate Company at Pittsburgh, and writes that he has just finished equipping a research laboratory for them.—M. M. Davis (VI.) is assistant examiner in the United States Patent Office, and when he wrote, was plugging for exams. in George Washington University Law School.—Daley (III.) is way out in Bingham Canyon, Utah.—Cary (I.) is instructor in mathematics at Princeton.—Brooks (I.) is foreman on a 50-inch steel rising main for the Tennessee Coal and Iron Company at Ensley, Ala.

IV. *Lost Department*

The secretary will be grateful for information regarding the present whereabouts of the following classmates: Ernest Curley, E. M. Mason, Paul H. Mayer, Charles Freed.

Changes of Addresses

S. E. Altamirano, P.O. Box 196 F, Mexico, Mex.—Thomas H. Atherton, Jr., Wilkesbarre, Pa.—Harold F. Ballard, 1124 Winina Street, Chicago, Ill.—Albert J. Barnes, New York Telephone Company, 25 Dey Street, New York, N.Y.—Lewis Barnett, 99 Marcy Avenue, Brooklyn, N. Y.—Chas. Batchelder, City Engineer's Office, Lowell, Mass.—Daniel Belcher, Stafford Com-

pany, Readville, Mass.—A. C. Besselievre, care of Lake Torpedo Boat Company, Bridgeport, Conn.—E. M. Bettington, P. O. Box 149, Johannesburg, Transvaal.—W. E. Boardman, 54 Pleasant Street, Wakefield, Mass.—J. C. Bollenbacher, 1612 Corn Exchange Bank Building, Chicago, Ill.—Clarence J. Brown, 251 Chamber of Commerce, Minneapolis, Minn.—Maurice L. Bullard, care of W. H. McElwain Company, Manchester, N.H.—D. K. Bullens, care of Parish Manufacturing Company, Reading, Pa.—Ballard Y. Burgher, Y. M. C. A. Building, Baltimore, Md.—Richard L. Cary, 23 Madison Street, Princeton, N.J.—Philip H. Chase, 38 College Street, Hanover, N.H.—Eugene L. Connolly, Caryville, Mass.—James H. Critchett, 1431 East Sixty-sixth Street, Chicago, Ill.—Mitchell J. Daley, Box 753, Bingham, Utah.—Frank H. Dunnington, care of Ontario Power Company, Niagara Falls, N.Y.—John J. Elbert, Kaiserdamm 113, Charlottenburg, Berlin, Germany.—G. Wilbur Everett, 35 Mt. Vernon Street, Boston, Mass.—Thornwell Fay, Jr., 1507 Rusk Avenue, Houston, Tex.—James I. Finnie, 240 Chestnut Street, Clinton, Mass.—Lawrence R. Forrest, Y. M. C. A., Lebanon, Pa.—Bernard R. Fuller, care of Director of Public Works, Santo Domingo, San Dom.—George M. Gadsby, care of Water Company, Warren, Pa.—R. Clifford Glancy, 2111 North Twelfth Street, Philadelphia, Pa.—Harold M. Glazier, State College, Pa.—Carl Gram, care of Pyramid Paint Company, 131 North Twenty-second Street, Philadelphia, Pa.—W. Duncan Green, 506 Peebles Street, Pittsburg, Pa.—Derick S. Hartshorn, 43 Wendover Street, Dorchester, Mass.—Harry L. Havens, Kansas City Terminal Railroad Company, Kansas City, Mo.—George A. Haynes, care of Haynes, Porter & Co., 65 Beverly Street, Boston, Mass.—Leon J. D. Healy, 152 Maple Street, New Britain, Conn.—H. H. Howland, Missouri Pacific Railway, Title Guarantee Building, St. Louis, Mo.—Robert N. Hoyt, Summit Board of Health, Summit N.J., or 52 De Forest Avenue, Summit, N.J.—Robert Inglee, Westdale, Mass.—W. B. Van Inwegen, Board of Water Supply, Valhalla, N.Y.—Frederick Jaeger, 172 Rector Street, Perth Amboy, N.J.—Lewis H. Johnson, 58 Willard Avenue, Bloomfield, N.J.—Barry H. Jones, 73 Hooker Avenue, Poughkeepsie, N.Y.—Alfred G. Kellogg, 62 Greenough Street, Brookline, Mass.—William J. Kelly, Hayden Street, 711 R, Leipzig, Germany.—Robert C. Kerr, 1720 Railway Exchange, Chicago, Ill.—Andrew Lewis, 178 Maple Street, Springfield, Mass.—Lynn A. Loomis, Technology Chambers, Boston, Mass.—William J. McAuliffe, 135 North Pearl Street, Albany, N.Y.—S. N. McCain, 492 Ludlow Arcade, Dayton, Ohio.—Thomas G. Machen, chez Mme. Reinburg, 4 Passage Stanislas, Paris, France.—Kevork Madenigian, 335 Madison Avenue, New City, N.J.—Andrew L. Matte, 178 Maple Street, Springfield, Mass.—Lincoln Mayo, 11 Robeson Street, Jamaica Plain, Mass.—Edward D. Merrill, 1310 Pleasant Street,

Des Moines, Ia.—Arthur B. Morrill, 3932 Lake Avenue, Chicago, Ill.—Ramon F. Munoz, care of Cia Minero De Penoles La Ojuelo, Eslado De Durango, Mex.—Henry E. Myers, 135 Ash Street, Akron, Ohio.—John W. Nickerson, care of Sayles Bleachery, Saylesville, R.I.—Haylett O'Neill, 600 West Fifty-ninth Street, New York, N.Y.—Harold W. Paine, 53 Haskins Street, Providence, R.I.—Herbert H. Palmer, Georgetown, Mass.—Harvey S. Pardee, 6521 Vernon Avenue, Chicago, Ill.—J. Stewart Pierce, Scott Building, Tulsa, Okla.—Samuel F. Perkins, 110 Tremont Street, Boston, Mass.—Henry R. Putnam, 908 W. P. Story Building, Los Angeles, Cal.—Charles W. Radford, 130 Sumac Street, Wissahickon, Philadelphia, Pa.—W. Carleton Read, 931 Maple Street, Sault St. Marie, Mich.—Edward J. Riley, 139 East Twenty-seventh Street, New York, N.Y.—Arthur L. Shaw, 234 Newbury Street, Boston, Mass.—Robert L. Smith, 94 Grove Street, Winchendon, Mass.—Thomas Spooner, 408 Todd Street, Wilksburg, Pa.—J. N. Stephenson, 2011 North Ninth Street, Terre Haute, Ind.—Herbert J. Stiebel, 408 Judge Building, Salt Lake City, Utah.—B. H. St. John, office City Chemist, Kansas City, Mo.—Prof. Lockwood J. Towne, Station A, Lincoln, Neb.—Channing Turner, care of Sears & Smith, 516 Howard Building, Providence, R.I.—Mrs. Stanley M. Udale, 2704 Farnam Street, Omaha, Neb.—George E. Wallis, University of Michigan, Ann Arbor, Mich.—Harry Webb, 237 Beacon Street, Boston, Mass.—Harold E. Weeks, Sprague, Keyes & Jackson, 88 Broad Street, Boston, Mass.—Edward E. Wells, 1012 West Lafayette Avenue, Baltimore, Md.—Malox P. Whipple, 66 Lincoln Street, Hudson, Mass.—E. T. Williams, Imperial Maritime Customs, Newchwang, China.—H. B. Winterstein, Belle Plaine, Iowa.—Paul M. Wiswall, care of C. T. Carbon Works, Fostoria, Ohio.—Philip E. Young, Huttleston Avenue, Fairhaven, Mass.—M. H. Foss, 4625 Lake Avenue, Chicago, Ill.—G. T. Palmer, 2138 East Hanover Street, Trenton, N.J.—T. A. Tillard, care of Sudan Irrigation Company, Khartum, Egypt.

1910.

JOHN M. FITZWATER, *Sec.*, 119 Henry Street, Brooklyn, N.Y.
G. BERGEN REYNOLDS, *Res. Sec.*, Southbridge, Mass.

On Friday evening December 9 the Technology Club of New York City reserved its small dining room for the use of those members of the class of 1910 who were in and about New York. About fifteen men responded to the notices. The men marched into the dining room together, and soon after being seated were greeted by the club members with welcoming cheers for 1910, to which 1910 responded with a rousing regular M. I. T. yell. After dinner the club members vacated the center lower floor of the club house for the use of the new class. A general good time was

enjoyed; each man being interested in the other's work. H. S. Gott officiated at the piano, and many of the good old Tech songs were sung. Before leaving, arrangements were made for another dinner early in January. The plan of a monthly dinner is to be followed, at which one or two members of the class are to give an account of their work. Those present were, Abbott Allen I., Harold E. Akerly, IV., Philip W. Burnham IV., Alexander G. Batsner IV., John M. Fitzwater I., Herbert S. Gott, VI., Karl W. Gasche X., Ira S. Hartman VI., Frank E. Hodges VI., George W. McRae VI., Elford M. Potter VI., Guy F. Shaffer IV., Walter F. Spalding IV., Horace E. Stump X. There were eleven men present at the second monthly dinner of the class of 1910 held at the Technology Club, New York, January 9, 1911. Potter gave a very interesting account of his work in connection with the Metropolitan Street Railway Company. Every 1910 man in New York or its vicinity should send his address to John M. Fitzwater, 119 Henry St., Brooklyn, N.Y., in order that he may receive announcements of the monthly dinners.—The engagement of Miss Elizabeth Balfour of Brighton and Chester Jackson Briggs, Course III., of Newtonville is announced.

Marriages

George L. Mylchreest was married to Iva A Harris of Middletown, Conn., January 12, 1911. Mr. and Mrs. Mylchreest will make their home in Rockville Conn., where Mr. Mylchreest is in charge of the Rockville branch office of the firm of consulting engineers, Buck & Sheldon of Hartford, Conn.—Merrill William Tilden, II., was married to Laura Massengale Rhett on February 8, 1911.—Louis Griffin Rowe, I., was married to Iva Louise Marshall March 2, 1911.—Arthur John Foote, I., was married to Clara Rebecca Smith November 19, 1911.

Changes of Addresses

Course I.—Spencer B. Lane, 160th Company, Coast Artillery Corps, Fort Stevens, Oregon, United States Army.—Pelayo Chinchilla is completing his studies at the Institute.—Allston T. Cushing, Fairville, St. John Co., New Brunswick, is with A. E. Hanson, C. E. Frederickton.—Allen Curtis, 26 Parker House Building, West Somerville, Mass., is with the Boston & Albany Railroad in the drafting department.

Course II.—Charles A Rott, 479 64th Avenue West Ellis Wis., is a student in the Gas Engine Department of the Allis-Chalmers Company.—Ernest L. Patch, United States Naval Academy.

Course IV.—H. Scott Gerity, 2530 Endora Street, Denver, Col., is with W. E. Fisher and A. A. Fisher, architects.

Course VI.—H. Behr, 85 Grone Street, Claremont, N.H., is with the Sullivan Machine Company.—John B. Myrick, 19 Exeter Street, West Newton, is with the New England Telephone and Telegraph Company, traffic department.